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COMMITTEE PRINT

A LEGISLATIVE HISTORY OF THE CLEAN  
AIR ACT AMENDMENTS OF 1977

A CONTINUATION OF THE CLEAN AIR ACT  
AMENDMENTS OF 1970

TOGETHER WITH

A SECTION-BY-SECTION INDEX

PREPARED BY THE

ENVIRONMENTAL POLICY DIVISION

OF THE

CONGRESSIONAL RESEARCH SERVICE

OF THE

LIBRARY OF CONGRESS

FOR THE

COMMITTEE ON ENVIRONMENT AND  
PUBLIC WORKS

U.S. SENATE

VOLUME 6



AUGUST 1978

SERIAL NO. 95-16

Printed for the use of the Committee on Environment and Public Works



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## CHAPTER 10

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S. 3219 TOGETHER WITH DEBATE, REPORT, AND MAJOR  
PROPOSED BILLS AND AMENDMENTS

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## NOTE

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The Senate Committee on Public Works reported S. 3219 on March 29, 1976. Floor action began in July. The Senate passed the bill on August 5, 1976 on a 78-13 vote.

(4502)

## PRELIMINARY STATEMENTS

Mr. BAYH. The Ford administration, consistent with the attitude of the previous administration, is attempting once again to retreat from the national commitment to a healthy environment. The administration is playing a shell game with the environmental budget.

The amount of new money available for environmental protection will be about \$10.8 billion less than that provided in fiscal 1976.

The fiscal year 1977 budget proposed by the administration calls for a cutback of \$53 million in the operating budget of the Environmental Protection Agency.

The \$143 million proposed for the air pollution budget represents a decrease of \$2.3 million from the fiscal 1976 level.

This short-sighted administration policy is pure folly. Not only is it an unjustifiable retreat from our goal of a better environment; it is short-sighted economic policy.

The administration would have us believe that we must make a choice between environmental quality and economic well-being. The facts are otherwise and this is why I believe the time is right for an expanded—not a reduced—environmental effort. The majority of the American people agree. A 1975 opinion research poll indicated that 6 people out of 10 opted for a more vigorous pollution control program.

Far from jeopardizing our economic recovery, environmental protection programs will create jobs and invigorate our economy.

As recent studies by the Bureau of Labor Statistics, the Environmental Protection agency, and the Council on Environmental Quality all indicate, pollution control is one of the few areas of job strength during the present continuing recession.

In 1975 alone, Federal, State, and private programs provided the Nation with more than 1.1 million jobs. While we must always be sensitive to our obligation to assist workers displaced due to environmental regulation, statistics show this will not be an overwhelming task. Plant closings partly attributable to environmental regulations have involved fewer than 4,000 jobs per year in the 4 years 1971 to 1975. Most of these plants were old and marginally productive, due to be phased out in any event. Many of the workers in these plants were shifted to other jobs within the same companies.

Environmental spending represents a real savings in living costs for millions of people. The money which is spent by individuals to restore their health or to repaint a home because of pollution damage reduces their standard of living. Conservative estimates of the 1975 costs to the health and property of the American public due to air and water pollution are over \$35 billion. Yet the estimated expense of controlling this pollution and eliminating the damage is \$20 billion, a net savings of \$15 billion. True savings are even greater because yearly benefits are incremental after the initial installation of equipment.

Environmental pollution control programs can create employment in virtually all job categories ranging from unskilled labor to professionals and technicians. The programs range over all regions of the country, from agricultural and forested areas to urban centers.

Even though air pollution abatement and control programs are badly needed in many metropolitan areas and generate between 70,000 to 80,000 jobs per billion dollars of expenditure, the Ford administration has proposed a decrease in the air pollution budget for the next fiscal year.

Mr. BAKER. I call the attention of my colleagues to a draft of a law review article written by my colleague, Senator Domenici.

I recognize that this article, as a draft, will be subject to future revisions. However, I think the article presents a good summary of the provisions of the 1976 amendments.

#### THE CLEAN AIR ACT AMENDMENTS OF 1976: BALANCING THE IMPONDERABLES

(By Pete V. Domenici, U.S. Senator)

On February 5, 1976, the Senate Public Works Committee, after ten months of travail reported out the 1976 Amendments to the Clean Air Act.<sup>1</sup> Hotly debated, the amendments have left industry and environmentalists alike dissatisfied. Despite the criticism that has attended the Committee's handiwork, I believe those of us on the committee successfully met the legislative challenge before us: the striking of a long-term balance between the Nation's environmental and economic needs.

Admittedly, the concept of "balancing" environmental and economic considerations has reached the status of a cliché. The important thing is how in fact the balance is struck and whether the competing interests involved are properly balanced. In offering my comments on the 1976 Clear Air Act amendments as reported by the Senate Public Works Committee, I recognize that inevitable changes will occur as the amendments move to the Senate floor, and from there, to conference with the House. The political and intellectual process, however, of exactly how a committee of the Congress attempts to balance such imponderables as human health and economic welfare strikes me as worthy of examination, even if it does not represent the Congress' final product.

I hope to show that despite the ad hoc procedure of Senators addressing particular legislative problems in a political cauldron, that there can emerge valuable precedents. I believe that examination of the 1976 amendments as a whole reveal certain consistent threads interwoven throughout. And in the aggregate, I believe these threads comprise a remarkably coherent theory on how to balance environmental and economic considerations in the future.

The basis for such claims, however, cannot be understood in an historical vacuum. The 1976 amendments are the offspring—some would say illegitimate—of the more comprehensive 1970 Clean Air Act Amendments. A review of the 1970 amendments is therefore an essential prelude to evaluating our 1976 efforts.<sup>2</sup>

#### 1. THE 1970 AMENDMENTS: A LEGISLATIVE BLITZKREIG

The Clean Air Amendments of 1970<sup>3</sup> were passed at the high-water mark of the environmental movement. Either as a distraction to the lingering Vietnam nightmare, or as an idea whose time had truly come, the environmentalists grabbed the nation's attention with their fundamental insight that America's affluent and industrialized life style threatened not only the public health, but also the very integrity of the eco-systems that support man. The 1970 amendments were also passed in a period of comparative economic tranquility when unemployment was hovering near the four percent mark and the nation was looking forward to a "peace surplus" in the federal budget for domestic programs as the war wound down.

<sup>1</sup> 42 U.S.C. § 1857.

<sup>2</sup> Prior to reviewing the 1970 Act, one caveat is in order: this article by focusing on stationary sources, such as coal fired electric utilities, gives short shrift to the automobile related issues of automobile emission limitations and transportation and land use controls. Despite some economic balancing considerations, discussions of automobile standards in the committee in 1976 were in the final analysis a judgment by the Congress as to the availability of adequate technology. Because of their political visibility, Congressional disposition of the automobile standards is sure to draw a great deal of independent comment. The automobile-related issues, nevertheless, must be subjected to at least some superficial analysis for the sake of completeness and in order to isolate certain basic balancing assumptions.

<sup>3</sup> 42 U.S.C. §§ 1857a-1858 (1970).

The result of this sunny legislative climate was a set of amendments that established an ambitious program to solve the nation's air pollution problems. Despite their complexity, the 1970 amendments are basically a statutory mechanism composed of standards and deadlines. Primary standards to protect public health were to be achieved by mid-1975.<sup>4</sup> Secondary standards to protect welfare values such as agricultural production were to be achieved within a reasonable time."<sup>5</sup> Extensions of the deadlines were narrowly circumscribed, with 1978 as an outside deadline from which there was no further appeal.<sup>6</sup>

The 1970 amendments were more than a political response to transitory popular sentiment. They were also the outgrowth of a decade of Congressional frustration over the slow pace of pollution control efforts. Prior Clean Air Act legislation beginning in 1955, and extending through the 1963, 1965, and 1967 amendments were considered a failure.<sup>7</sup> The federal-state partnership and considerations of practicability that were part of previous amendments were jettisoned by the 1970 amendments.<sup>8</sup> One of the drafters of the 1970 Act has commented that carryover language from earlier amendments that air pollution control "is the primary responsibility of states and local governments"<sup>9</sup> is a "vestigial remainder . . . and is now an anomaly vis-a-vis the nearly total federal supervisory and approval authority contained in the Act as amended through 1970."<sup>10</sup> Although states maintained their status as front line troops, the Administrator of EPA's power under the 1970 amendments to approve, disapprove, and promulgate substitute state implementation plans clearly put the federal government in firm control. With respect to the issue of whether the technical feasibility of achieving the national ambient air quality standards should be a consideration, the Senate committee report was explicit:

"In the Committee discussions, considerable concern was expressed regarding the use of the concept of technical feasibility as the basis of ambient air standards. The Committee determined that (1) the health of people is more important than the question of whether the early achievement of ambient air quality standards protective of health is technically feasible . . ."<sup>11</sup>

<sup>4</sup> 42 U.S.C. § 1857c-5(a)(2)(A).

<sup>5</sup> *Ibid.* Technically, primary standards were to be achieved three years after the state implementation plans (SIPs) were approved. Eighteen months were provided after the law was passed for the promulgation and approval of SIPs. The four and a half years ran out in the middle of 1975.

<sup>6</sup> Under 42 U.S.C. § 1857c-5(c) a Governor may apply for a two year extension of a deadline at the time when the Administrator is approving a SIP. Sixteen states have received such extensions. However, once a plan has been initially approved, the option of requesting an extension vanishes. A one-year extension for an individual source is available under 42 U.S.C. § 1857c-5. Testimony presented to the Public Works Committee indicated such one year extensions were hard to come by. Mr. Carl Beard, director of West Virginia's air pollution control program, stated that it took two years of administrative hassles to get a one-year extension for several power plants. The drain on state manpower was prohibitive. (See *Hearings before the Subcommittee on Environmental Pollution of the Senate Committee on Public Works, 94th Cong., 1st Sess. (1975)*), part 2, p. 1501. Hereafter referred to as *Hearings*).

<sup>7</sup> See Thomas Jorling's chapter on the Federal Law of Air Pollution Control in *Federal Environmental Law*, Environmental Law Institute, St. Paul, Minnesota, West, 1974 edited by Erica L. Dolgin and Thomas G. P. Guilbert. Mr. Jorling was minority staff counsel, and one of the actual drafters of the 1970 amendments.

<sup>8</sup> Jorling, p. 1061-3.

<sup>9</sup> 42 U.S.C. § 1857.

<sup>10</sup> Jorling, p. 1062-63.

<sup>11</sup> Senate Report 91-1196, p. 2. The Senate Committee on Public Works has compiled a legislative history of the Clean Air Act Amendments of 1970 (Comm. Print 1974). See Vol. 1, p. 402.

The above quote on technical feasibility is principally concerned with standard setting. A collateral issue is (a) whether states must consider technical feasibility in drawing up their SIPs and (b) whether the Administrator in approving state implementation plans must take economic and technical feasibility into account. This latter issue has been the subject of some extremely esoteric litigation. The Third Circuit in *St. Joe Minerals Corp. v. EPA*, 503 F. 2d 743 (1975) ruled that EPA in approving SIPs must consider economic and technical feasibility while the Eighth Circuit in *Union Electric Co. v. EPA*, 515 F. 2d 206 (1975), has ruled exactly opposite. The issue is now before the Supreme Court. One critical point that has been ignored by both the Courts and the commentators is that the law and its legislative history clearly distinguish between the health-based primary standard and the welfare related secondary standard. The above quote from the Senate Report has as its premise that economics and technical feasibility must give way before the imperatives of public health considerations. A similar conclusion does not logically follow where we are speaking of the welfare based secondary standard. The Courts and commentators have ignored this statutory distinction which would offer a possible point of departure for balancing economic against air quality considerations when achieving the secondary standard is at stake. This point will be raised again since the distinction was resurrected by the Senate Public Works Committee as part of their 1976 amendments. For a thorough review of the litigation on the subject of feasibility, which parenthetically ignores the primary-secondary distinction, see Samuel A. Bleicher's *Economic and Technical Feasibility in Clean Air Act Enforcement Against Stationary Sources*, 89 Harvard Law Review 316 (1975).

The Congress in enacting the 1970 amendments contemplated a legislative blitzkrieg by the federal government that would roll over economic and technical difficulties and bring the nation with limited exceptions healthy air by mid-1975.

The Senate, Public Works Committee recognized that as with any frontal assault, there would be casualties. The Senate Report noted that until a full generation of new cars was on the road (approximately ten years production): "as much as seventy-five percent of the traffic may have to be restricted in certain large metropolitan areas if health standards are to be achieved . . ."<sup>12</sup> For stationary sources such as power plants, steel mills, and refineries, the Senate Report offered the option of "either . . . meet the standards of the law or be closed down."<sup>13</sup> Moreover, the Senate Report foresaw the possibility that many industrialized areas could be denied the benefits of future economic growth.

"In air quality control regions where present air quality is below the standard, rigorous restrictions must be placed on existing sources to provide a margin for future growth, or only pollution-free growth, development and expansion will be possible." (Emphasis added)<sup>14</sup>

## 2. THE SPIRIT OF '76: LEGISLATING IN HARD TIMES

The warm legislative climate of 1970 had cooled considerably by the time the Public Works Committee began its deliberations in March of 1975.<sup>15</sup> The environmental wave had ebbed after setbacks in Congress on land use and strip mine legislation. The economy was in the doldrums. Nationwide unemployment was 9 percent and approaching 20 percent in the automobile industry. The oil embargo and the resulting energy crisis of 1973 had elevated concerns over energy supplies to the same level as concerns for environmental quality. Politically, Watergate had triggered an allergic reaction to politicians in general, and the federal government in particular. Washington bureaucrats had become a curse word. Grassroots politics were in, federal mandates out.

It was also obvious that the days of blitzkrieg warfare in the cause of environmental controls were over, and that the battle for environmental quality had settled into a protracted struggle. Air quality data presented in March of 1975 to the Public Works Committee by Russell Train, Administrator of the Environmental Protection Agency (EPA), showed both progress and the enormity of the task still before the nation. Overall, sulfur oxide concentrations in the ambient air were down 26% since 1971, while particulates were down 15 percent.<sup>16</sup> Automobile emissions were down 83 percent.<sup>17</sup> The apparent gains in sulfur dioxide control, however, result not from fewer emissions reaching the atmosphere, but rather from more effective dispersion.<sup>18</sup>

Geographic compliance with the mid-1975 deadlines were also mixed. Of 247 air quality control regions in the nation, Administrator Train projected that 60 would not meet statutory deadlines for the particulate standards, 42 for sulfur oxides, and 74 for photochemical oxidants.

Moreover, the dynamics of the situation were hardly favorable. Continued economic growth threatened many of the tenuous gains made by the 1970 amend-

<sup>12</sup> Senate Rept. p. 2. Legis. Hist., p. 402. The Senate Report prediction of 75% reductions in auto travel within major metropolitan areas was remarkably accurate. The transportation control plans for Los Angeles called for 85% reductions in vehicle miles traveled (VMT) while the Houston plan called for 75% reductions. The Report, however, also contained some historical anomalies such as "greater use of natural gas for electric power generation may be required" (p. 2).

<sup>13</sup> Senate Rept. p. 3. Legis. Hist., p. 403.

<sup>14</sup> Legis. Hist., p. 413. This issue of growth in areas where the standard is being violated has become labeled the "steel industry" issue because of its difficulties in expanding at sites where the air is already below the national standards.

<sup>15</sup> Besides a cooling in the economic and political climate, two other changes are perhaps worthy of note. First, the composition of the Committee had changed. Of the 15 members of the Public Works Committee in 1970, only 5 remained in 1975, four of them Democrats. Second, Committee markups were held in open session. Accordingly, interest groups from all sides were able to respond to positions taken by Senators in Committee. For my part, the open markups assured a steady but mixed stream of sound information and mildly hysterical lobbying tactics.

<sup>16</sup> Hearings, p. 185.

<sup>17</sup> Hearings, p. 15.

<sup>18</sup> Ibid. The drawbacks of dispersion as a control technique for sulfur oxides is that they combine with other elements in the atmosphere to form sulfates which the medical community believes may be more of a hazard than the original sulfur oxides. Accordingly dispersion may be only trading one hazard for another, rather than representing progress.

ments.<sup>19</sup> Sulfur oxide emissions from powerplants were projected to increase by 50 percent between 1970 and 1980.<sup>20</sup> Growing nitrogen oxide emissions from stationary sources were negating gains made in reducing nitrogen oxide emissions from automobiles.<sup>21</sup> Both trends will be exacerbated by increased reliance on coal as an energy resource. The growth in automobile usage also threatens to overwhelm gains made in cleaning up each individual automobile. In an area such as the Washington, D.C. area, while population slowed to a 5.2 percent increase between 1970 and 1974, automobile ownership jumped 29 percent. EPA projects that in 1985, even after the benefits of 15 years of federal controls on automobiles, 63 urban areas will require additional transportation control measures to meet the Act's health-based standards.<sup>22</sup>

The Committee at the outset of its 1976 deliberations recognized that the emotional elan that had sustained the Congress in the early days of environmental legislation had evaporated. Moreover, it was not just a case of a long struggle that would at least yield some clearcut victory. Instead, the Committee found itself in a continuing struggle without end. A growing industrialized economy will exert continued pressure on our environmental resources. Since the nation is committed to both economic growth and environmental quality, the struggle and tradeoffs must be conducted daily. For champions of the environment, the role had shifted from one of being a shining knight on a white charger to that of the mythical figure Sisyphus who was eternally condemned in Hades to roll uphill a giant boulder that always rolled down again.

## 2. THE 1976 AMENDMENTS KEEPING THE TRAIN ON THE TRACK

The 1976 Clean Air Act amendments were passed by the Public Works Committee in response to particular problems that had arisen in the implementation of the law. Despite the importance of changes in political sentiment and economic conditions in setting an emotional framework for passage of the amendments, it was difficulties with the Act itself that gave rise to the need to amend the law.<sup>23</sup>

However, prior to listing the problems addressed by the Committee, it is equally important to note one area of the law that the Committee refused to alter.

This was the national primary and secondary ambient air quality standards. These standards and the protection they offer to the public health and welfare are the linchpin of the Act. Industry has repeatedly voiced their objections to the standards: the oil industry to the oxidant standard, the utility industry to the sulfur dioxide standard and the steel industry to the particulate standard. The Committee after reviewing the results of a National Academy of Sciences reports on the subject,<sup>24</sup> and listening to testimony from the medical community, turned a deaf ear to industry complaints on the standards.<sup>25</sup>

<sup>19</sup> To say economic growth work at cross purposes with environmental quality is only to state the obvious. I personally concur with Professor Wolin's observation that "the fundamental presupposition of American pluralism, the basic condition which has supported both intense group rivalry and a general acceptance of the 'rules of the game,' has been an expanding economy. The dominant economic groups of business, finance, agriculture, and, later, labor accommodated themselves to rules which they had the power to change; while excluded groups were pacified by the surpluses periodically available or their more 'advanced' elements were absorbed." N.Y. Review of Book, p. 8, Feb. 5, 1976.

<sup>20</sup> Hearings, part 1, p. 16.

<sup>21</sup> Hearings, part 3, p. 14.

<sup>22</sup> The figure of 63 urban areas was submitted to the committee during its deliberations in January 1976. This represents a dramatic increase from EPA's Nov. 1974 projection that approximately 10 cities would pose problems in 1985. This 1974 projection, however, noted that for some of these regions, the need for additional transportation control measures "will persist indefinitely." For the 1974 figures, see pages 1-7 in EPA's 1974 Report to the Congress on Transportation Controls to Reduce Automobile Use and Improve Air Quality in Cities, Horowitz and Kuhrtz, U.S. EPA, Nov. 1974, EPA-400/11-74-0022.

<sup>23</sup> Most members, with other committee work, constituent work, and the need to stay abreast of world events, have plenty to keep them busy without gratuitously undertaking to amend the Clean Air Act. Only a political masochist would undertake 10 months of committee effort on a law as politically volatile as the Clean Air Act.

<sup>24</sup> See both Air Quality and Automobile Emission Control, NAS, Sept. 1974, and Air Quality and Stationary Source Emission Control, NAS, March 1974.

<sup>25</sup> Hearings, part 1, pp. 757-838; for statements of Drs. Finklea, Griffin, Ferris and Knelson. Ironically, industry may inadvertently have benefited from the Committee's refusal to open up the national standards for legislative review. Testimony as to the health hazards of fine particulates, sulfates and short term nitrogen oxide concentrations may have led to stricter, not weaker, standards.

In an act with basically two working parts, standards and deadlines, the Committee chose to let one remain untouched. This left the deadlines as the major variable around which to structure its compromises.<sup>29</sup> Thus, at the outset, the Committee reaffirmed the basic purposes of the Clean Air Act by simply refusing to open up the standards for review. This *sub silentio* affirmation is easily lost if one simply focuses on the 1976 amendments where the deadlines were extended in response to the realities of reforming a national economy that has for a century used the environment as a free dumping ground.

The generic problem with the law that faced the Committee was that the deadlines were not being met. The air quality standards were not being met in many air quality control regions throughout the nation, individual stationary sources were out of compliance with their emission limitations, cities had failed to meet deadlines for implementing transportation control strategies, and the automobile deadlines were considered by industry and EPA unrealistic. Moreover, there remained the issue of whether the Congress in 1970 had established a policy of "nondegradation" for those areas of the country with air cleaner than the national secondary standard. In the areas of nondegradation and transportation control plans, implementation of the Act had slipped into a state of suspended animation, awaiting Congressional action. Without major revisions, the law faced the prospect of becoming dead letter law; a collection of pious hopes honored only in the breach. It is my opinion that the solutions fashioned by the Committee served to breathe new life into the law.

### (a) Stationary Source Problems

The 1970 Senate Report had bravely asserted that existing stationary sources had a choice of meeting "the standard of the law or be closed down." When the Senate Public Works Committee began discussions in 1975, it was apparent that an alternative to shutdown was needed. As of March 1975, EPA estimated that of 20,000 major sources,<sup>27</sup> 2,200 or 11 percent were out of compliance.<sup>28</sup> More importantly, noncompliance was centered in several of the nation's basic industries:

*Coal fired electric utilities*: between 150–200 of 480 were out of compliance.

*Iron and Steel Mills*: between 125–150 of 200 were out of compliance.

*Nonferrous Smelters*: 19 of 28 were out of compliance.

*Refineries*: between 100–130 of 250 were out of compliance.

*Pulp Mills*: between 100–130 of 250 were out of compliance.

*Industrial Commercial Boilers*: between 800–1,200 of 3,500 were out of compliance.

Actually, Administrator Train was being generous with respect to the steel industry. In a later report, EPA admitted that for the steel industry, "at least one SIP emission limitation is being violated at almost every installation."<sup>29</sup>

The Committee was faced with more than the question of shutting down a limited number of recalcitrants. Instead, because of widespread noncompliance in certain basic industries, the choice had escalated to whether the national economy itself should be shut down.<sup>30</sup>

The Committee's response to the dilemma posed by the noncompliance of much of the nation's basic industry was twofold. First, it authorized EPA and the states to issue extensions to noncomplying sources up to January 1, 1979. This

<sup>28</sup> This statement is an oversimplification. In addition to ambient standards and deadlines, the Act contains emission limitations which are the control requirements placed on individual stationary sources and automobiles in order to meet the ambient standards. Other areas of flexibility are identified later.

<sup>27</sup> EPA defines a major source as one that emits over 100 tons of a given pollutant per year.

<sup>29</sup> Hearings, part 1, p. 164. In September of 1975, EPA published an updated compliance report that changes in some of the particulars the information given the Committee in March of 1975. The basic outlines, however, remained the same. Some of the discrepancies relate to the fact that the September report divides the category of "out of compliance" into two categories: "in violation" and "unknown status." See: State Air Pollution Implementation Plan Report, January 1 to June 30, 1975; (EPA-450/2-75-008, Sept. 1975).

<sup>30</sup> State Air Pollution Implementation Plan Report, *ibid.*, p. 16.

<sup>31</sup> Several related factors are at play in the failure of these basic industries to comply with the law. One is recalcitrance at incurring high capital costs for what is viewed by industry as nonproductive capacity. The second factor is that 5 basic industries—electric utilities, nonferrous smelters, steel mills, refineries, and pulp and paper mills—are footing 70 percent of the nation's air pollution control bill. (\$23 billion of a \$32 billion total.) A third factor is that several of these industries, such as the copper industry, are suffering low profit margins which limits their capability to finance pollution control expenditures by either internal or external financing.

effectively moved the statute's attainment dates from mid-1975 to 1979. For sources planning to comply by closing, no interim compliance measures were required.

Second, the Committee adopted a compliance strategy employing economic penalties where sources fail to comply.<sup>31</sup> Historically, economic penalties as a pollution control strategy have been given short shrift by lawyers such as myself who are more comfortable with judicially oriented regulatory strategies. The value of penalties, however, is that they diffuse the severity of deadlines by offering a noncomplying source an additional option—paying money—to closing down.<sup>32</sup>

The Committee at my urging also added a small restatement of present law that the compliance penalties in no way altered the right of states to revise the attainment date of the secondary standards to reflect a "reasonable time" for such attainment. The importance of this apparently gratuitous addition is that it resurrects a distinction between primary and secondary standards that has been lost in the law's administration.<sup>33</sup>

In addition to setting up a general framework for forcing existing stationary sources into compliance, the committee also resolved two specific problem areas affecting the compliance problems of stationary sources. First, the committee resolved a lingering dispute as to whether intermittent controls were a legitimate control technology. Such controls are given their name because they involve shutting off production or shifting to lower sulfur fuels when meteorological conditions cause buildups of pollutants that threaten to violate the national standards for sulfur dioxide. Industry has championed such controls because of their low cost. Environmentalists have opposed the technique for being unenforceable since they believe weather forecasting is a sophisticated form of witchcraft, and because it merely disperses rather than reduces pollution. Instead environmentalists have contended that "continuous controls" such as scrubbers are the proper way to control sulfur oxide emissions from major industrial sources.

The committee's solution to the intermittent control issue had two parts. The first part stated that intermittent controls are illegal for electric utilities. The second part said that for nonferrous smelters dispersion techniques are available as a *supplemental* technique. This means that reasonably available continuous control measures must be used as a precondition to employing intermittent techniques. For the copper industry, for example, this generally means that acid plants must be used to capture "strong stream" gases, but that intermittent controls may be used on "weak stream" gases.<sup>34</sup>

In ruling out intermittent control systems for utilities the committee ended for the time being a long-standing debate between EPA and the utilities over the re-

<sup>31</sup> The penalty is to be assessed in the form of monthly payments equal to the cost of compliance so that no economic advantage is gained by a source out of compliance. One important wrinkle in the Committee's delayed compliance penalty scheme is that it may be waived in cases where conditions beyond a source's control make compliance impossible. This was added to surmount objections that requiring a source to do the impossible could open the penalty section to attacks on constitutional grounds. Such a *force majeure* clause also recognized the presence of uncertainties with respect to the general availability of flue gas desulphurization equipment (scrubbers) and low sulfur coal. The clause, however, requires that a source do its best to obtain such equipment or coal. This is in marked contrast to the present situation where sources have pointed to potential shortfalls in scrubbers or coal as an excuse for not entering into contracts to obtain them.

<sup>32</sup> See Hearings, part 2, p. 1513. Larry Ruff, an economist with the Ford Foundation, testified in support of economic strategies.

<sup>33</sup> During one of the Committee's markup sessions, Mr. Billings, the Committee's Senior Professional Staff member noted:

"When we wrote the Clean Air Act of 1970, the basic thrust of this Committee was that primary standards were national and secondary standards were state and the secondary standards would be established from the criteria developed by the Federal Environmental Protection Agency. But their implementation, the deadline for their implementation and the procedures for their implementation, would basically be a State responsibility and a State decision process.

"The way the Act is currently written, it is difficult if not impossible for a State to revise their secondary standards, the emission limitations and the deadlines so as to lessen their applicability, reduce the restrictiveness of them." (Transcript, Dec. 19, 1975, p. 729.)

Historically, this phenomena of the fusion of the attainment date for the primary and secondary standards came about at the law's outset. EPA regulations established 3 years as a "reasonable time" for achieving the secondary standard, unless the states could show good cause that 3 years was inappropriate. (40 CFR 51.13(b)(1)-(2).) Since 3 years is the same amount of time given in the statute for achieving the primary standard, the achievement deadline for the two standards was fused at the outset. Also see Footnote 8.

<sup>34</sup> "Strong stream" gases come from a smelter's converters (and sometimes roasters). Acid plants, as the name suggests, take the strong stream gases and make sulfuric acid. "Weak stream" gases from the reverberatory furnace cannot be sent to the acid plant, and must therefore be controlled in another fashion.

liability and efficiency of scrubbers. The Committee's decision clearly puts the burden on the utility industry to prove through real world experience the case against scrubbers. In allowing supplemental systems for nonferrous smelters, the Committee was making a technological judgment that continuous controls were not available for copper smelter "weak stream" gases. The Committee was also making an indirect balancing judgment on differences in the economic situation between the copper and utility industries. The copper industry, suffering from a world-wide decline in copper prices, had experienced declines in profits on the order of 59 percent in the third quarter of 1975 compared to the third quarter of 1974.<sup>35</sup> In contrast, the utility industry, as a regulated utility and with a guaranteed return on investment, it is in a different position, and is thus a more appropriate economic entity to lead the way in putting on pollution control equipment.<sup>36</sup>

The second issue specifically addressed by the Committee was the problem of industrial expansion in areas where the ambient air quality standards are being violated. As noted before, the 1970 Senate report correctly predicted that in areas where the standards were being violated, "only pollution-free growth" would be possible. Regrettably, pollution-free growth still remains a remote ideal to strive for. And for industries such as steel, which wishes to expand at existing sites in dirty air areas, pollution-free growth is little more than a mirage. In search for a resolution to the problem of growth<sup>37</sup> in dirty air areas, the committee was faced with the possibility that denying growth in such regions could create incentives to growth in clean air regions, areas given special protection under the nondegradation sections of the committee's amendments.

The Committee's answer has both a subtle and an obvious component—of the two, the subtle is the more important. The subtle component involves a restatement of existing administrative practices. Presently there is virtually no case law on the problem of growth in areas constrained by the national standards. Administrative decisions allowing or denying growth have been handled on an ad hoc basis. Two general theories have emerged. One states that if a standard is being violated in an air quality region, no growth at all is permissible. The other view contends that new facilities or expansion can be allowed if it can be shown that the growth will have no effect on whether the national standards are achieved or not. A small facility, for example, far away from a large polluter responsible for violations of the standards could be built without affecting the attainment of the standards. This latter possibility gives states latitude to manipulate their SIPs to allow for growth even where standards are being violated. It is this latter possibility that the committee codified.

In cases where an existing<sup>38</sup> source wishes to expand but such an expansion would affect attainment of the national ambient standards, the committee laid out a rigorous set of hurdles for a source to jump: the basic hurdle being that a source must get into compliance and then further control its own emissions so that it creates its own reserve increment for growth.<sup>39</sup> Obviously, the severe technological constraints involved make this portion more illusory than real. However, by codifying the more lenient of the competing theories on expansion in dirty air areas, the Committee injected a new dose of flexibility into decisions made at the state level.

### (b) *No significant deterioration*

The mirror image of the problem of allowing for growth in the dirty air areas is the problem of growth in areas with air cleaner than the national secondary

<sup>35</sup> Kennecott Copper, the industry giant, lost \$20 million in the third quarter.

<sup>36</sup> The position taken by the Committee constituted a ratification of existing circuit court law and administrative policy that has distinguished the problems of the utility and copper industries. The most recent cases are *Kennecott Copper Corporation v. Train*, — F. 2d — (C.A. 9, November 28, 1975) and *Big Rivers v. EPA*, — F. 2d — (C.A. 6, Sept. 4, 1975). EPA's policies are laid out at 40 F.R. 49362 (Oct. 22, 1975).

<sup>37</sup> Growth can either be a new facility, or expansion of an existing facility.

<sup>38</sup> Note that no avenue is available to a new source that wants to expand if it would affect attainment of the national ambient air quality standards.

<sup>39</sup> A numerical example may save the discussion. A source in compliance is emitting 10 units of pollution. To grow, it can reduce its emission to 5 units and then expand back up to a total of 10 with its new facility. This is called the "bubble concept." Actually, the way the bill was written, the source could only expand up to a total of 9.9 pollution units, since there was a requirement that overall total emissions following expansion had to represent "reasonable further progress" towards attaining the standards.

standard. This issue bears the label of "nondegradation" or "no significant deterioration."

At the outset, the question arose as to whether the 1970 amendments contemplated a federal strategy to maintain the air quality of pristine regions where the air was better than the secondary standard, or did the federal interest stop at the secondary standard and the preservation of higher levels of air quality remain a state prerogative.<sup>40</sup> The matter was decided when a split Supreme Court affirmed the view of the lower courts that the Congress contemplated a nondegradation policy in the 1970 amendments.<sup>41</sup> EPA's regulations to implement the Supreme Court decision, themselves the subject of ongoing litigation, divided clean air regions into three classes. Class I areas would be areas of environmental concern in which little or no growth could occur. Class II areas were designed to allow for orderly well-controlled growth. In a Class III area, a state could allow concentrated industrial development all the way up to the secondary standard.<sup>42</sup>

Testimony before the Committee challenged the presence of a Class III, attacking it as a loophole. In particular, the director of my state's air quality division challenged the Class III as unwarranted.<sup>43</sup> Moreover, environmentalists strongly urged that rather than allowing states to make Class I designations, as under the EPA proposal, that the Congress should designate certain areas as being of critical concern. Reduced to basics, the environmentalist's argument was that we should not have power plants on the rim of the Grand Canyon.

Industry's response to the discussion was to dismiss the debate as unmitigated nonsense. If the secondary standard was fully protective of welfare benefits, no more was needed; and if not, then the standard should be revised. An elaborate nondegradation policy was simply uncalled for. If states desired greater protection, they were free under the Act to set stricter standards than the federal standards.<sup>44</sup>

The Committee rejected the industry (and Administration) position that nondegradation should be abandoned as a national strategy. The philosophical basis

<sup>40</sup> The issue has cropped up in Court proceedings that since the secondary standard is based on "welfare," any federal protection beyond attainment of the secondary standard is unconstitutional. See the Brief for the petitioners in *American Petroleum Institute, et al. v. EPA*, U.S. Ct. of Appeals for District of Columbia Circuit No. 75-1665.

<sup>41</sup> *Sierra Club v. Ruckelshaus*, 344 F.Supp. 253, 2 ELR 20262 (D.D.C. 1972) aff'd, 2 ELR 20656 (D.C. Cir. 1 Nov. 1972). The Supreme Court, by a split vote on 11 June 1973, upheld the lower courts' position, sub nom., *Fri v. Sierra Club*, 412 U.S. 541, 3 ELR 20684. The lower courts hinged their decision on the phrase "to protect and enhance" in the Act's preamble. Although this is a slender statutory reed, the 1970 Senate Report states: "In areas where current air pollution levels are already equal to, or better than, the air quality goals, the Secretary should not approve any implementation plan which does not provide, to the maximum extent practicable, for the continued maintenance of such ambient air quality." Sen. Rept. 91-1196, p. 11. Jorling also lays out in some detail the case that a nondeterioration policy was part of the 1970 amendments. Op. Cit. p. 1077-1082.

<sup>42</sup> See 39 FR 31000 (Aug. 27, 1974) and 39 FR 42510 (Dec. 5, 1974). Class I and Class II areas were based on increments of allowable pollution. The following table offers a comparison with the national air quality standards. Note that the annual and 24-hour sulfur dioxide standards are the primary standard. Court cases have invalidated EPA's annual and 24-hour secondary standards. *Kennecott Copper Corp. v. EPA*, 462 F. 2d, 846 (1972).

	National standards *		Class I		Class II	
	Sulfur Dioxide	Particulates	Sulfur Dioxide	Particulates	Sulfur Dioxide	Particulates
Annual.....	b 80	b 75	2	5	15	10
24 hour.....	b 365	c 150	5	10	100	30
3 hour.....	c 1,300	-----	25	-----	700	-----

\* Also same as EPA class III.

b Primary.

c Secondary.

<sup>43</sup> Hearings, Testimony of Cubia Clayton, part 1, p. 857-8.

<sup>44</sup> 42 U.S.C. § 1857d-1.

for nondegradation has a variety of threads.<sup>45</sup> Since, however, examination of the complete data is beyond the scope of this paper, I would like to quickly sketch the components of the Committee's solution and precisely what balancing mechanisms were involved.

(1) *Automatic Class I Designations*: In the early stages, the Committee had an extensive laundry list of federal lands that were to be designated as Class I areas. The problem stemming from these designations was that to protect the air over such areas (i.e., meet the Class I increment) development had also to be restricted in surrounding areas. This came to be known to the members as the "intrusion" issue. Because of its "land use" implications in limiting growth in areas surrounding a Class I designation, the intrusion issue was also the most politically explosive. All the members of the Committee were barraged by interest groups decrying the non-degradation provisions as "no growth" and "federal land-use control." Although such claims were exaggerated, often piling worst case assumptions on top of each other, they did pinpoint the fact that extensive Class I designations by the Congress with their accompanying shadow effects carried grave potential risks for future development.

The Committee's response to the intrusion issue was twofold. First, it reduced the number of automatic federal Class I designations to national parks and wilderness areas.<sup>46</sup> Additional federal lands can be upgraded to Class I by a state and federal land manager acting in concert. States are also free to give extra protection to any of their lands they wish, but they are not required to impose the Class I increment on such protected lands. The Class I increment is a model not a requirement for state lands.

<sup>45</sup> Arguments in Favor or nondegradation include:

(a) *Margin of Safety*. Present standards do not adequately address the effects of chronic exposure to low levels of pollutants nor the synergistic effects of pollutants interacting with each other. Furthermore, the standards do not cover all pollutants including sulfates, nitrates, fine particulates, and some heavy metals. Thus, nondegradation provides a margin of safety for existing standards. Taking this argument one step further, it appears plausible to argue that pending the outcome of further health-effects research, we should not allow the nation's air to be unnecessarily degraded until the full public health ramifications of the "multipollutant" issue are known. This argument also applies to uncertainties with regard to acid rains, climatic change, and effects on the ozone layer.

(b) *Prevention*. Related to the above is the well-known axiom that it is cheaper to prevent pollution than it is to clean it up. If further research shows the need for additional controls beyond the secondary standard to protect the public health and welfare, we are in a better position to correct the problem if we have minimized the degree of degradation than if we let the air be polluted up to the secondary standard and must then conduct a costly retrofit program.

(c) *Quality of Life*. Balancing equities for an industry building a new source in a clean area assumes a different pattern than the case of an existing industry in a dirty area. An existing industry can claim that a fair resolution of its environmental problems requires acknowledging the plant's prior existence and the economic reliance of the surrounding community. A new plant in a clean area cannot employ these arguments. In fact, much of a clean area may be populated by people who either came to the area to avoid pollution or who have established businesses such as recreational facilities that rely on a certain level of environmental purity.

Even if one accepts the concept of nondegradation, some industry representatives have questioned the existence of a legitimate federal interest. Possible responses to this line of argument include:

(a) *Interstate Pollution*. Since air pollution is no respecter of state boundaries, it has national implications, particularly where certain pollutants (sulfates, heavy metals) may be transported great distances.

(b) *National Energy Implications*. Industry has undercut its own contentions on the lack of a federal interest by invoking the national energy picture as one of its principal arguments against any nondegradation policy. In fact, both the steel and utility industry have argued for varying forms of federal preemption of state standards stricter than the federal secondary standard on the basis of national economic and energy policy considerations. Having invoked a larger federal interest as a reason for preempting state nondegradation efforts, industry can hardly claim no federal interest when it is not to their liking.

(c) *Discrepancy in Costs and Benefits*. Much of the benefits of rapid energy development will not accrue to the states where such development is located, but rather to other regions. New Mexico power plants, for example, are supplying California with electricity. Citizens of California receive the benefits while New Mexican citizens pay the costs in terms of a degraded environment. This discrepancy between those enjoying the benefits and those paying the costs argues for a federal role to minimize environmental costs.

(d) *Preventing Economic Coercion*. 19 states filed or joined in briefs before the Supreme Court endorsing the concept of nondegradation. Although these states had a broad range of interests from those of Pennsylvania and New York to those of New Mexico and South Dakota, they all argued the common theme that they did not want clean air to be used as a bargaining chip in its siting negotiations with industry. Dirty air regions feared industrial flight while clean air regions feared they would have to compromise air quality to attract new industry. Recognizing their individual weakness in the face of industry threats to move elsewhere unless accommodated, they asked for a federal nondegradation umbrella under which clean air would be a bargaining point with industry. Two states filed briefs opposing the nondegradation concept—Arizona and Idaho.

<sup>46</sup> The removal of wildlife refugees eliminated a key culprit from the list. An EPA-FEA study entitled "An Analysis of the Impact on the Electric Utility Industry of Alternative Approaches to Significant Deterioration," October 1975, identified wildlife refugees and their buffer zones as responsible for two-thirds of the constraints placed on the construction of new power plants by the Class I designations, V. 1, p. 33.

The second part of the Committee's solution to the intrusion question was to change the function of the Class I increment. Originally, the Class I increment represented an absolute requirement; if the state's preconstruction review showed that the increment would be violated over a Class I area, no construction permit could be given. Several of my colleagues felt ill at ease with this result. They felt the Class I increment was based not on protecting any ecological values, but rather on the limits of existing air quality models. Instead, they argued that an "adverse impact" test was more appropriate. Class I increment advocates responded that adequate knowledge for establishing an ecologically based measure was not readily available within the scientific community. And case by case determinations would be extremely time-consuming and produce endless litigation.

The Committee solution was a classic political compromise which fused the increment and the adverse impact test. The Class I increment now serves to shift the burden of proof between the parties. Where a new source will meet the Class I increment it is up to the federal land manager to convince the state that the proposed facility will have an adverse impact on the Class I designated area. Where a source does not meet the Class I increment, it is up to the source to prove to the federal land manager there will be no harm to the Class I area.

The net effect of the Committee's approach was to disarm the land use and no growth implications of the Class I designations and Class I increment. Instead, protection of Class I areas had become a balancing process, with the Class I increment serving to create a *prima facie* case according to the circumstances.

(2) *The Class II Increment*: With the Class I increment relegated to protection of a limited number of federal lands, the Class II increment had become the nationwide measure of significant deterioration. Industry had repeatedly objected to the Class II increment as "arbitrary," since it was not pinned to protecting environmental values. What this line of argument ignored was the fact that the Class II increment was economically derived; that it was designed to accommodate well-planned orderly growth, with a 1000 megawatt power plant meeting new source performance standards as the benchmark. In response to industry challenges to the Class II increments, an EPA-FEA report<sup>47</sup> showed that while the debate was raging, an aluminum plant in Oregon and a refinery in California were approved which met the Class II increment.<sup>48</sup>

The Committee was not totally oblivious to concerns expressed about the Class II increment. It realized that any set of numbers in a statute is bound to lead to anomalies during the course of the laws administration. The record, however, failed to clearly point to any major deficiencies with the Class II increment. What was needed was a feedback mechanism to tell the Committee down the road if the Class II increment was acting as a major constraint on all growth rather than acting as a catalyst for well-ordered growth. The Committee's solution paralleled that taken under the Federal Water Pollution Control Act amendments of 1972 when it was also worried about the prospective consequences of its actions: a national air quality commission was to be created. Solid information as a result of real world experience was considered more valuable than continued speculation over the impact of the Class II numbers.

(3) *Best Available Control Technology*.—Nondegradation is a policy strictly limited to new facilities. The key to its implementation is the state preconstruction review process. As such, many of the reasons that argue for balancing with respect to the problems of retrofitting an existing plant do not apply. Communities have not centered their economic and social livelihood around the plant. The costs of retrofit technology do not threaten shutdown. Instead, the costs of control technology can be worked into the economic equation of the plant's profitability from the outset. A new facility has the option of employing process changes in the way a product is manufactured rather than strictly relying on add-on pollution control technology.<sup>49</sup>

<sup>47</sup> EPR-FEA Rept. Op. Cit.

<sup>48</sup> In level terrain, EPA found that employing combinations of low sulfur coal, scrubbers, and tall stacks, facilities greater than 5,000 mw could be built. The largest class of plants now contemplated are in the 3000 mw range. EPA-FEA, Volume II, p. IV-2.

<sup>49</sup> This observation was contained in a Jan. 22, 1976, letter from Roger Strelow of EPA to Senator Stafford, a member of the Public Works Committee.

<sup>50</sup> The Committee further narrowed the scope of the nondegradation policy by limiting the application of the sulfur dioxide and particulate increments to new "major" facilities emitting over 100 tons of pollutants per year. In defining "major emitting facility" for the purposes of nondegradation the Committee specifically identified 28 types of industrial operations ranging from power plants to lead smelters. This was done to exclude sources such as hospitals and schools which may have a small boiler but whose contributions to the ambient air are marginal. Such specificity also had the advantage of greatly reducing the potential for unanticipated anomalies that could come back to haunt the law and its supporters.

In light of the advantages enjoyed by a new facility, the Committee added an extra layer of protection to its nondegradation policy in the form of a requirement that new major sources use best available control technology (BACT). This BACT requirement is to be state administered, and may supersede EPA's new source performance standards.<sup>51</sup>

The rationale behind BACT was to prevent the first source moving into an area from using up the full increment. An unintended side effect of the BACT requirement was that it greatly reduced the land use impacts of Class I designations. During the early stages of the nondegradation debate, maps purporting to show the impact of the amendment showed a radius of 60 miles for the shadow effect around a Class I area. These maps assumed that new plants had only to meet EPA's new source performance standards. Maps done by EPA and FEA that employed BACT assumptions showed a radius of six miles in the west and 27 miles in the east.<sup>52</sup> Thus, BACT, coupled with the Committee's subsequent actions to reduce to a minimum the number of Class I areas and to defuse the Class I increment, effectively minimized the land use impacts of nondegradation.

Industry opposition to BACT centered on the additional costs involved. In particular, the utility industry and EPA, after an exchange of data, concurred that the BACT requirement would comprise approximately 80% of the costs of nondegradation, or add between \$5.6 and \$9.4 billion to the capital costs of a nondegradation policy over the period from 1975 to 1990.

On the basis of these apparently extreme costs, an amendment was proposed that would have required states to consider "environmental, economic and other costs" in applying the BACT requirement. Personally, I opposed the amendment. Ignored in the debate were the overall capital requirements of the utility industry. EPA calculated the utility industry's capital needs over the 15 years at between \$300 and \$440 billion. Industry estimates run as high as \$600 billion. When compared against total capital needs, BACT capital requirements are in the neighborhood of two percent.<sup>53</sup> This seemed to me an affordable price tag for protecting the nation's pristine areas. My second objection to the amendment was that much of the electrical power at issue will be exported from states such as New Mexico, Arizona, Idaho, and Utah to California. Under such circumstances, it hardly appears excessive to request California consumers to pay for the protection of New Mexico's environment. New Mexico, and other energy rich states should do their share to alleviate the energy crisis, but they should also be free to take whatever steps are necessary to mitigate the environmental costs of having the "skunk works" located at their backyards. I believe this amendment is one example of where an attempt to balance was misconceived. A proper weighing of competing interests would have left the matter at the total discretion of the states. I consider this, however, only a minor flaw in a basically sound legislative mechanism to allow the nation the benefits of ordered growth.

### (c) *Automobile related issues*

As noted at the outset, the automobile related issues of automobile emission standards, transportation controls and land use controls will be given limited treatment not because of the unimportance of the subject matter, but because of its vastness.<sup>54</sup>

Critical to an understanding of the Committee's actions in this area is that automobile emission standards, transportation controls and land use controls are all pieces of the same puzzle—not separate strategies. The Act specifically states that where emission limitations on automobiles are inadequate to achieve the national ambient air quality standards, additional measures "including, but

<sup>51</sup> EPA's new source performance standard BTU's for power plants is an emission factor for sulfur dioxide of 1.2 pounds per million that can be met by either scrubbers or low sulfur coal. Testimony before the Committee (Hearings, part 1, p. 859-60) indicated that the EPA new source performance standards represent a stagnant compromise. The record demonstrated that new sources were being required to achieve less control than those already being achieved by some existing sources where scrubbers were used in addition to low sulfur coal. (Ibid. See also Hearings, part 2, p. 1585-6.)

<sup>52</sup> EPA-FEA Study, V. 1, p. 27. The smaller radius in the west is due to the availability of lower sulfur coal. BACT is assumed to be scrubbers and low sulfur coal.

<sup>53</sup> Most of the data for this discussion is found in a Dec. 16, 1975, letter from Mr. Strelow of EPA to Senator Morgan.

<sup>54</sup> Of the four volumes of Committee Hearings, three deal almost exclusively with this area.

not limited to, land use and transportation controls" must be employed.<sup>55</sup> Thus, if automobile emission standards are eased or delayed, then transportation and land use controls must be stiffened to take up the slack if the standards are to be met on time.

Since 1973, attainment of the automobile emission standards had been delayed three times, twice by administrative decision and once by statute.<sup>56</sup> In each case the issue was one of technological availability: was there a piece of hardware or some new combustion process that would allow the automobile manufacturers to meet the standards. At the time of the 1976 amendment, the record was again mixed. The National Academy of Sciences<sup>57</sup> claimed the standards could be met by the statutory deadline of 1978 while EPA and the automobile manufacturers presented the opposite view. For my own part, the balance was tipped in favor of additional delay by the testimony of the pollution control equipment vendors themselves. Gould, the builder of the promising dual catalyst for controlling nitrogen oxides, admitted that its catalyst required low sulfur fuel,<sup>58</sup> generally unavailable. Durability data submitted by Englehardt showed that its three-way catalyst was not yet able to meet the statutory standards.<sup>59</sup> After months of pushing and tugging, the Committee finally decided to extend the date for compliance with the final statutory standards until 1980.<sup>60</sup>

The same balancing mechanism of additional time was also granted in the transportation control area. And if there was any portion of the 1970 Act that needed breathing space, it was transportation controls. A U.S. Court of Appeals opinion early in 1973<sup>61</sup> ruled that the transportation control and land use sections of the law must be fully invoked where reductions in automobile emissions were inadequate to meet the standards. This legalese resulted in parking surcharges and restrictions on parking being declared reasonable measures to be implemented by 1975. Gas rationing was to be enforced by 1977 in order to achieve reductions in auto travel on the order of 85% in Los Angeles and 75% in Houston.

In addition, some of these measures were mandated by EPA since some states had thrown up their hands at the problem and submitted obviously deficient plans, triggering the requirement in the law that the Administrator promulgate substitute plans.<sup>62</sup> The grassroots uproar that attended the EPA promulgated plans led to Congressional intervention. In 1974, Congress prohibited EPA from promulgating parking surcharges and suspended its parking management regulations until January 1, 1975.<sup>63</sup> Subsequently, EPA's 1974 and 1975 appropriations were conditioned by Congress to prohibit the use of funds to "tax, limit, or otherwise regulate parking."

<sup>55</sup> 42 U.S.C. § 1857c-5(a) (2) (B).

<sup>56</sup> Ruckelshaus delayed the standards in 1973, Congress in 1974, and Train in 1975.

<sup>57</sup> NAS Report—May 1975. The 1978 statutory standards are in grams per mile, HC=.41/CO=3.4/NO=.41.

<sup>58</sup> Hearings, part 3, p. 262.

<sup>59</sup> Hearings, part 3, p. 163-4.

<sup>60</sup> The Committee's decision is full of nuances. The following chart is an attempt to make it partially coherent.

	Present law			Committee's decision		
	HC	CO	NO <sub>x</sub>	HC	CO	NO <sub>x</sub>
1977-----	1.5	15.0	2.0	1.5	15.0	2.0
1978-----	.4	3.4	.41	1.5	15.0	2.0
1979-----				.4	3.4	<sup>a</sup> 2.0
1980-----				.4	3.4	1.0

<sup>a</sup> 10 percent of the cars must meet 1.0 in 1979.

As can be seen, the final NO<sub>x</sub> standard was changed from .41 to 1.0 because (1) stationary source NO<sub>x</sub> emission appears to be overwhelming any need to go lower than 1.0 NO<sub>x</sub>, and (2) because a final NO<sub>x</sub> standard below 1.0 threatened to inhibit more fuel efficient engine alternatives such as stratified charge engines. American Motors, because of its lack of technological capabilities was exempted from the 1979 requirement of 10% of its cars having to meet the 1.0 NO<sub>x</sub> standard.

One additional point on the delay of the final auto standards until 1980 is in order: it will have no discernable public health impact. Legitimate arguments against giving the auto companies until 1980 are instead based on a differing assessment of the availability of adequate technology. Unsound arguments usually involve an anti-industry bias.

<sup>61</sup> *NRDC v. Train*, 475 F. 2d 968 (D.C. Cir. 1973).

<sup>62</sup> 42 U.S.C. § 1857c-5(c) (1).

<sup>63</sup> P.L. 93-319. 42 U.S.C. §§ 1857c-5(c) (2) (B) and (C).

The courts were also assisting Congress in bringing the transportation control plan process to a halt. Three circuit courts held illegal, and by implication unconstitutional, EPA promulgations which imposed potential sanctions if state or local officials failed to control pollution within their borders.<sup>64</sup> By the time Congress began its deliberations on the 1976 amendments, EPA had suspended most of its transportation control measures: the patient was in critical shape and Congressional attention was required.

The Committee's response was straightforward. Up to two 5-year extensions (for a total of 10 years) are available for communities to meet the standards. Moreover, to minimize the prospects of widespread EPA promulgations, a local planning process is established that meshes air quality planning with planning for such programs as highways and mass transit.

The Committee's decision to place more control at the local level and allow more time represents an attempt to give the transportation control process a second life. As an ex-mayor, I am firmly convinced that without strong local participation the transportation control effort is doomed. On the other hand, we may be foregoing the hope of ever protecting the health of our citizens in our major metropolitan centers. Although I consider the Committee's solution a reasonable one, the issue of how to gain public support for those changes in the American life style essential to the protection of public health is one I expect myself and other members of the Committee to be wrestling with for years to come.

A similar fate to that experienced by transportation controls was undergone by the land use sections of the 1970 Act. EPA in proposing its transportation control plans invariably entitled them "land use and transportation control" plans. Sorting out which elements of the plans were precisely land use and which were transportation controls was difficult. Many of the Court decisions also mixed the two. As for political volatility, land use was a fighting word in many portions of the nation. Accordingly, the "land use" section of the 1970 Act was as moribund as transportation controls by the time the Committee began its markups on the 1976 amendments.

After extending transportation controls, the issue was what to do with land use controls. For the Committee, the land use discussion focused on the regulation of "indirect" sources of pollution such as shopping centers, sports arenas, and parking lots whose presence induces traffic congestion which in turn leads to violations of the ambient air quality standards. Few issues "induced" more fire within the Committee. Were land use and growth strictly local matters or is there a federal interest in the protection of public health? And if there is a federal interest, what form should it take?

The argument against a federal role, one which ex-officials such as myself find alluring, is based on the distastefulness of the federal government intruding into local matters. The counter arguments for a federal interest also have merit, however. Much of what is considered local growth is in fact federally funded. Highways, airports, sewage treatment facilities, low cost housing, urban renewal, schools and hospitals all receive federal tax dollars. Should not the expenditure of federal funds for such projects be consistent with other national objectives such as clear air? Moreover, major sections of the private sector—e.g., car consumers, and industry—are having imposed upon them by the federal government expenditures in the tens of billions of dollars to achieve clean air. Should growth decisions made by local governments be able to negate the progress achieved by those private sector expenditures?

The Committee's answer was to restrict the federal interest to those two elements of the Act essential to the long-run protection of public health. First, land use authority was limited to new sources.<sup>65</sup> Regulating existing sources was rejected as counterproductive. Second, land use was limited to maintaining the health-related primary standard. By limiting the federal interest to its bare essentials, I believe the Committee's efforts provide a solid interim solution. But, as with our efforts on transportation controls, only a dreamer would think we have seen the last of this issue.

<sup>64</sup> See *Brown v. EPA*, 8 ERC 1053 (9th Cir. 1975), *Maryland v. EPA*, 8 ERC 1105 (4th Cir. 1975), *D.C. v. Train*, 8 ERC 1289 (D.C. Cir. 1975). For a circuit court case supporting EPA's efforts see *Pennsylvania v. EPA*, 500 F. 2d 246 (6 ERC 1769), 3rd Cir. 1974.

<sup>65</sup> This is what is meant by a "maintenance strategy" in contrast to an "attainment strategy" which also deals with existing sources.

#### 4. BALANCING THE IMPONDERABLES: A ROUGH CUT AT A THEORY

The Committee, in fashioning the 1976 amendments, was met at every turn with the same question in a different guise: How to balance the public health and environmental mandates of the Clean Air Act with a national economy that had grown strong by using the environment as a free dumping ground for its wastes? The Committee's solution was to avoid the problem in such sweeping terms and instead to break it down into a set of smaller, more concrete issues and then seek answers for them.

##### *A. Extension*

For stationary sources, cities and automobile manufacturers unable to meet the deadlines, the Committee's solution was to offer more time, not to amend the ambient standards. This served to keep the basic structure of the Act intact while facing up to the fact that correcting the bad habits of a complex economy may take more than half-a-decade. The Committee also added several corollaries to this general adage of "extend, don't amend." First, where the standards could be met by a less satisfactory form of technology such as supplemental control systems in the copper industry and where technological and economic considerations precluded the installation of superior technology, the Committee thought it more important to meet the standards than to mandate technology. Second, the Committee defused the severity of the overall deadlines by allowing a fee to be paid rather than forcing a shutdown. And finally, by resurrecting the distinction between the primary and secondary standards, the Committee reasserted the primacy of public health considerations under the Act. Specifically, the Committee pinpointed the attainment date for the secondary standard as a proper vehicle for states to use as their own balancing mechanism. And with respect to land use, the Committee went so far as to jettison the secondary standard altogether.

##### *B. New sources*

In recognizing the problems of bringing existing sources into compliance the Committee was doing little more than recognizing the inevitable. New sources were a different matter. Here the Committee was faced with the problem of economic growth and its potential for overwhelming those gains made by existing sources. The advantages possessed by new sources, in being able to incorporate environmental constraints at the planning stages made them, in the Committee's eyes, an appropriate category to shoulder an increasing share of the clean up burden. The nondegradation, steel, and land use amendments all focused on new sources as the critical component in insuring that yesterday's gains are protected and tomorrow's gains assured.

##### *C. Management issues*

The 1976 amendments restored a greater role to the states. The extension procedures, nondegradation, the steel amendment, and the transportation and land use control provisions all place greater reliance on state and, in some cases, local initiative. To some extent, the Committee's emphasis on state and local government reflects the political temper of the times. I believe it also accurately reflects the management needs of the Clean Air Act. The need for a preeminent federal presence to energize recalcitrant states has passed. The states now possess the needed expertise to become full partners in the program.<sup>66</sup> And without their assistance, there is little hope of successfully administering a program that has as its subject matter every facet of American economic life.

##### *D. Public acceptance*

At the crest of the environmental movement in the early 1970's public acceptance was not an issue. It was just a matter of getting the job done. In 1976, however, maintaining public support for environmental causes is of critical concern. Accordingly, the Committee has tried to minimize the potential for a public opinion backlash. The first potential trouble spot was land use. In both the land use and nondegradation provisions the Committee defined a minimal

<sup>66</sup> The environmentalists have noted that the 1970 amendments have elicited a "significant positive response by states and localities to this federal call for action." See Hawkins' testimony, Hearings, part 2, p. 1602.

federal role consistent with the federal interest. In doing so, it walked the line between codifying a pervasive federal role being urged by environmentalists and eliminating any federal role being urged by local officials and the business community. In nondegradation, the Committee limited nondegradation's land use impacts to protecting federal lands of critical environmental concern. In the land use section of the law it targeted its role to those elements essential to the long-range success of the law—new sources and the primary standard.

In granting extensions to cities for their transportation control plans, the Committee was also skirting another potentially fatal pitfall for the Act; namely, interfering with the driving habits of the American public. As long as pollution controls remain a small percentage of the overall price of a new car, the clean air effort remains out of sight and only a source of mild complaint. When, however, the cause of clean air demands gas rationing or even taking away a person's parking place, it demands a unified political will presently unavailable. In letting local communities work out their own solutions, the Committee recognized that having the federal government unilaterally pursue the issue was only suicidal.

The implications of the answers worked out by the Committee are of major importance for the theory of environmental legislation embodied in the 1970 amendments. The 1970 amendments were the legislative equivalent of the human wall theory of warfare; the objective must be taken regardless of costs. Five years were given to achieve the standards, and no quarter asked. Considerations such as economic and technological achievability were only for the faint hearted. If plants must close and traffic halted, so be it. And at the head of the charge was to be the federal government, prodding a reluctant army of states and localities.

In retrospect, the 1970 amendments represented a brilliant tactical maneuver. If 2,200 major sources remain out of compliance, at least 17,800 now meet the standards. Emissions from individual automobiles have been reduced over 80%. And most importantly, the national consciousness has after centuries of neglect become environmentally aware. A new class of sin—environmental degradation—has filtered into the American mind. Now, even when we turn our backs on the environment, we are at least punished by a stab of guilt pangs.

But as noted earlier, the 1970 amendments were floundering by the time the Committee began its work. The battle had been transformed into protracted warfare. A new set of strategic principles were called for. Those worked out by the committee—extensions, the emphasis on new sources, more responsibility at the state level, and responsiveness to public sentiment—all reflect a new tone of caution. Rather than a headlong assault, an incremental approach of consolidating gains and carefully preparing for the next step had taken hold. Also, the concepts of feasibility and state partnerships rejected by the 1970 amendments had resulted. The extensions granted to existing sources, the automobile manufacturers and cities all reflect a desire to minimize casualties. Along with the decision to allow the copper smelters to use supplemental systems, the Committee's work has resurrected the issue of economic and technological feasibility.<sup>67</sup> Standards are to be met, but not at all costs. Time is also a tool at our disposal, and if more of it is needed, then it should be employed. States and localities were also accorded partnership status. The decision seems to stem from a mixed belief that (1) they deserved to be accorded such status, and (2) they also might be ready to mutiny. In either case the wheel had come full circle from the 1960's when the states and the federal government were co-equals in the program.

In the 1976 amendments, the Committee reaffirmed the basic policy goals of the Act. But the reaffirmation came at a cost to the theoretical underpinnings of the 1970 Act. A cautious incrementalism had replaced the prior militancy. Technological and economic feasibility had returned as important considerations. The states were again partners. And continued public support was considered essential. Personally, I believe each of these additions to the law's philosophical foundations represents a step forward. The theory may be made complex but it is also on a sounder footing.

<sup>67</sup> The issue of economic and technological feasibility has two parts. One is the extent to which the Committee took economic and technological feasibility into consideration in arriving at the 1976 amendments. This is what is being referred to here. The second part of the issue deals with whether the states and EPA in the state implementation plan process must consider technological and economic feasibility (See Footnote 11). Although silent on this issue, the Committee did speak indirectly to the issue by reminding the Courts and states that the secondary standard attainment date was available as a balancing mechanism to deal with economic and technological problems.

Mr. Moss. On April 13, I introduced amendments to the Clean Air Act amendments of 1976 which were reported in late March as S. 3219 by the Public Works Committee.

My amendments are designed to postpone the effect of the nondeterioration section—section 6—of the bill for the purpose of making a complete study of the effects which implementation of this nondeterioration policy would have on important competing national goals. Specifically, I am concerned about the jobs which will be lost, the tax revenues which will not be generated, and, most importantly, the energy resources that will not be developed if it is implemented.

Perhaps no other item in recent history has caused as much criticism of Congress as our failure to formulate and implement a clearcut, effective, national energy policy. The proposed nondeterioration policy presents an immense unknown quantity in this regard, for there has been a noticeable dearth of information and public hearings about the effect of that policy on this and other important national goals. To be sure, my concern is somewhat based on the fact that my State of Utah has immense energy resource potential along with many national parks and monuments and the proposed nondeterioration policy will “probably” curtail the development of much of my State. I use the word probably because present information does not allow any greater certainty of prediction. This uncertainty is perhaps the most objectionable aspect of the entire problem. We are being asked to vote “yea or nay” on a policy, the ramifications and implications of which are not now known. For the Congress to take action in such an informational vacuum, would be irresponsible and unforgivable.

Though Utah and some of the other energy-producing States are the biggest potential losers from such a policy, no area of the country will go unaffected. My colleagues are starting to realize this, and many of you have expressed your support for my amendments. Original cosponsors include Mr. Garn, Mr. Metcalf, Mr. Eastland, Mr. Johnston, Mr. Stone, Mr. Fannin, and Mr. Tower.

Since April 13, my office has received numerous letters and phone calls expressing support for these amendments. Much of this correspondence comes from other congressional offices. Apparently, we have struck a responsive chord and others have begun to accept the rationale of our proposal to postpone the decision on nondeterioration for 1 year, while the necessary study is made of the effects of nondeterioration on the economy. Only after that study has been made will Congress have the information it needs to assess this policy in light of competing and important national goals.

I am happy to add the following cosponsors in support of my amendments: Mr. McClellan, Mr. Hruska, Mr. Helms, Mr. Bartlett, Mr. McGee, Mr. Cannon, Mr. Hollings, Mr. Bellmon, Mr. Symington, and Mr. Goldwater.

Some misunderstanding has arisen about the effects which my amendments will have on existing EPA regulations pertaining to nondeterioration. These regulations were promulgated pursuant to 101 (b) of the existing Clean Air Act.

My amendments affect only new provisions or additions to the act, therefore, the EPA regulations are not affected. It is very possible that the existing regulations will be declared invalid by the D.C. circuit court or the Supreme Court when they consider the matter, but

that is a matter internal to the court process and not within Congress's jurisdiction. In order for Congress to invalidate these existing regulations, it would be necessary to specifically amend section 101(b) of the act to restrict EPA regulatory activities regarding air quality to the attainment of national primary and secondary standards only. I understand that Senator William L. Scott may submit such an amendment, but my amendments are not addressed to this matter.

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### THE MYTHS OF SIGNIFICANT DETERIORATION

Mr. BUCKLEY. Mr. President, next week, the Senate is scheduled to consider S. 3219, the Clean Air Amendments of 1976. During that debate, the major issue will probably involve the provisions of section 6, the language that defines the existing requirement that clean-air areas be protected against deterioration.

In preparation for that debate, I have read some of the analyses of the bill that have been sent to Congress. If one is to rely on these assessments, our bill sounds exceedingly ominous: a source of economic stagnation and paralysis to growth. Such an assessment is wrong. It is wrong because the analyses of our bill are based on misconceptions and misstatements.

There is value in examining some of these statements, to compare them with the realities of S. 3219. One of the most startling publications is a broadsheet that carries no identification, but which has been circulated by the U.S. Chamber of Commerce. This statement appears among its specific declarations:

Consulting geologists at Kent State University studied the impact of significant deterioration regulations on the 11 States where major portions of the nation's coal, oil shale and uranium are found.

They concluded that—

- (1) New processing of approximately 90 percent of Kentucky's coal reserves could be prohibited;
- (2) West Virginia could suffer inhibitions affecting more than 86 percent of its coal areas . . .

This is a startling assertion, one deserving careful attention. But the assertion bears no relationship to the requirements of S. 3219.

This quoted statement is based on a study by Dr. John Anderson, made under contract for the American Petroleum Institute. Dr. Anderson, a geologist who holds the title of full professor at Kent State University, conducted his study based on 1974 regulations issued by the EPA. It was not based on the bill as reported by the Committee on Public Works. Its assumptions vary sharply from the requirements that are contained in S. 3219.

The Anderson approach was clear cut: it drew arbitrary, 50-mile buffer zones around nearly all Federal property: national parks, national monuments, national forests, and so on. It concluded that no energy development could take place inside any such zone. Because Kentucky and West Virginia and adjoining States contain extensive national forest areas, the chamber's document concludes that these coal reserves are untouchable.

But as I indicated, this conclusion bears no relationship whatsoever to the provisions of the bill that is before the Senate. Mining is not

even one of the specific industrial categories listed in the bill for coverage by State significant deterioration permit review.

In addition, only national parks and national wilderness areas are included in the Senate bill in the category relating to the Anderson study. Third, the Senate bill establishes no arbitrary buffer zones, but creates a mechanism for case-by-case review by the State of a proposed source's effect on the air quality values of the national park or the national wilderness areas.

Thus, S. 3219 will have no adverse impact on coal extraction in West Virginia, Kentucky, or elsewhere.

The critics of this bill have taken research that may—I repeat, may—be valid in interpreting present EPA regulations, and used it for a specious attack on the Senate bill. That is wrong, and I believe it should be so recognized.

In a quick check, I have found numerous statements and erroneous assertions that are being circulated by industry in an effort to undermine the committee's bill. I have put together a number of these points that I hope will help to clarify this issue for my colleagues:

Assertion: The committee's bill goes considerably beyond existing law.

Fact: The requirement to "protect" existing levels of clean air has been law since 1967. This bill defines that requirement more precisely, replacing existing EPA regulations with a defined Congressional policy.

Assertion: Class I areas will be off-limits to construction of new major, polluting sources.

Fact: That is correct. But as Class I areas are national park and national wilderness areas, logical and existing national park and wilderness legislation preclude development inside those areas of steel mills or refineries, the types of industry covered by the significant deterioration provision.

Assertion: The significant deterioration provision will have a more severe impact on some states than on others.

Fact: Just the opposite is true. By setting a single standard for determining significant deterioration, the bill equalizes the impacts as much as possible. Certainly this is true in comparison to the more rigid, three-tiered scheme in the EPA regulations, which industry now appears to favor.

Assertion: "The mandatory establishment of Class I zones will drastically limit, if not prohibit, the siting of large fossil-fuel electrical generating facilities in California." (Pacific Gas and Electric Co.). That company has circulated maps showing "how little of the State (of California) remains for development," based on 50-mile buffer zones around "California's national forests and national monuments." "These buffer zones, within which major sources will also be prohibited, can extend 150 miles." (Pacific Gas and Electric).

Fact: National forests and monuments do not receive Class I review unless the State and the Federal Land Manager agree to provide Class I designation for specified areas. Each plant-location decision will be made under the Senate bill after a case-by-case analysis on the air quality values for which a particular national park or wilderness is operated.

Assertion: Assateague Island National Seashore would be established as a Class I area and there would be a 55-mile buffer zone around the seashore "within which any industrial, commercial or residential development would be strictly limited." (Delmarva Power).

Fact: Any designation of a national seashore as a Class I area would be made jointly by the State and the Federal Land Manager; it is not mandated by the Senate bill. Each major facility proposal would be reviewed separately on the basis of air quality values; there would be no reference to a buffer zone. The provisions for analyzing significant deterioration involve only specified types of major new industrial sources; they have no impact whatsoever on commercial or residential development.

Assertion: "No new construction of a major facility may be begun in an area with air better than the Federal Standards without an EPA permit." (Deere and Company). The provisions on significant deterioration give "a single appointed official in Washington, D.C., the final say-so on how states and their citizens can use public and private lands." (Chamber of Commerce).

**Fact:** The Senate bill augments reliance on state authority. The bill requires a state permit, not an EPA permit. It is the present EPA regulations that could be construed as increasing reliance in Washington.

**Assertion:** In discussion expansion, a hypothetical plant might take up "65 percent of the allowable pollutant increment established by the Senate bill. But if, several years after our construction program is underway, significant construction is begun by several other employers or by a municipality in the same or nearby cities which uses up the remainder of our allowable increment (and this appears quite likely), we would simply have to stop building." (Deere and Company).

**Fact:** This is false. The Senate bill creates a pre-construction review process. Once the state agrees to permit construction of a facility, this legislation imposes no restrictions that could halt construction, unless the source violates the terms of the permit itself.

**Assertion:** "The technology necessary to determine with reasonable precision whether the proposed allowable non-deterioration increments are met is not presently available." (Deere and Company).

**Fact:** Prevention of significant deterioration involves a permit-review process, based upon fully available measurement and modeling techniques to determine the dispersion of anticipated levels of pollutants.

**Assertion:** This bill requires industry to study the air-pollution effect of a proposed plant.

**Fact:** That is correct. Existing law requires such examination in relation to the EPA regulations and through State implementation plans relating to ambient standards. It is prudent policy that the owner of any proposed major new industrial source—a steel plant or a power plant or a chemical complex—be required to tell the State what impact can be expected from that proposed facility so that State can judge whether it will adversely effect the State.

**Assertion:** Even in Class II areas, "smaller facilities with package boilers, such as small industrial, commercial, and public buildings, and large apartment houses, would also be restricted." (Chamber of Commerce).

**Fact:** This bill establishes a single national norm, allowing extensive growth up to that norm. According to Delmarva Power, "A plant as large as 2,000 megawatts could be built without violating the Class II increments for SO<sub>2</sub> or total suspended particulates (TSP) proposed by the Senate.

**Assertion:** "Any new or modified plant would have to use the best and most expensive air pollution control equipment, plus use the lowest sulfur coal." (Chamber of Commerce).

**Fact:** The significant deterioration analysis affect only a few specified industries, not "any new or modified plant." Thus, it will not affect the vast majority of construction. The Senate bill does not require use of the "best and most expensive" pollution control equipment; it requires use of the "best available control technology," which is defined in the bill as a level to be determined on a "case-by-case" basis by each State, "taking into account energy, environmental, and economic impacts and other costs." Rather than forcing the use of "the lowest sulfur coal", the Senate bill seeks to promote the use of reasonable technology, thus encouraging industry to abandon its present posture favoring the burning low-sulfur coal in preference to the installation of control devices.

**Conclusion:** This analysis is not meant to encompass every statement and misstatement concerning the Senate bill. Rather, I am offering it in a brief attempt to encourage the Senate and the public to study the Senate provision in greater detail. I believe the Committee bill represents a reasonable guideline, one that will provide both for environmental protection and industrial growth. The Senate bill, ironically, is responsive to the requests of industry clarification of the significant deterioration language. Now the object seems to be to sweep our efforts under the rug in hopes the whole thing goes away.

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#### NON-DEGRADATION IS NECESSARY

Mr. MUSKIE. Mr. President, nondegradation policy was first articulated in Federal water pollution control law in 1967 and incorporated in the 1967 Air Quality Act, which stated that a basic purpose of the act was to "protect and enhance the quality of the Nation's air re-

sources." That policy was not altered in the 1970 amendments. Requirements to implement this policy were deleted from EPA's guidelines in 1971. The courts subsequently required EPA to promulgate such requirements, and EPA complied by issuing regulations on December 5, 1974. During hearings in 1973, 1974, and 1975, the committee was urged to resolve this issue through legislation.

As early as July 1973, Carl Bagge, representing the National Coal Association, said:

This is far too significant an issue to be determined by the Judiciary. Its economic and social implications are so broad that it cannot and should not be determined by an independent regulatory agency in a rule-making proceeding as has been proposed. This is an issue which can only be resolved . . . by the Congress of the United States.

Mr. Bagge also went on to say that "The next move is clearly up to Congress."

The administration also asked Congress to address this issue when it submitted the Clean Air Act Amendments in 1974.

Numerous studies have been conducted on the implications of various nondegradation policies. The committee considered these and fashioned a proposal which encourages the economic growth needed for this Nation while providing environmental protection of air resources needed by the Nation. Only the most valuable Federal assets—national parks and national wilderness areas—have been given a special protected status—called class I.

The concept used to protect clean air while allowing adequate growth is a concept of air quality increments. The increments are amounts of new pollution which may be added by new facilities to existing air quality—they provide a uniform national measure of change in air quality which can be allowed in clean air areas, thus eliminating inequities among States while providing some degree of control over the pace of utilization of limited air resources. [Sec. 163]

The committee received numerous studies of the nondegradation policies. Those studies were an important element in the committee's decision to make substantial alterations in the subcommittee bill. The changes include:

First, reduction of the number of areas given pristine air quality protection—class I—from 360 to 131;

Second, expansion of the State role in all aspects of nondeterioration policy and implementation with concurrent restriction of the Federal Government's role;

Third, provision of flexibility in determining whether or not proximity to a class I area would affect construction of a new facility thus eliminating arbitrary buffer zones.

Much of the criticism of the nondegradation do not take into account these and other significant changes which the full committee made in the bill.

#### IMPLICATION OF REJECTING THE COMMITTEE PROPOSAL

One of the amendments proposed to the reported bill would strike the committee proposal. Another amendment would add a study of the implications of the amendment. I have no objection to this study. It is a logical mandate to the National Commission on Air Quality.

But the companion amendment to strike the committee proposal is both unwise and ill-conceived. Not only would a reasonable resolution to the nondegradation controversy be discussed but, more importantly, the existing policy and regulation would be left in place. EPA's current regulations are simply not an adequate response to this problem.

The key question is this: What policy will the Nation have for the next 2 years—a bureaucratic-judicial policy or a congressional policy?

If a motion to strike the committee's proposal and substitute another study—3 years of studies and thousands of pages of testimony have already been accumulated—the result will be a policy developed and implemented at the Federal level and in the courts with no congressional guidance and no meaningful State participation.

The result will be: Continuation of the requirement that new facilities in clean air regions obtain Federal permits; Continuation of the authority of Federal land managers to unilaterally designate any Federal lands as class I without concurrence by States; Continuation of 60- to 100-mile buffer zones around any such class I areas; Continuation of Federal authority to reject any State efforts to gain control of this program; and Continuation of uncertainty caused by lack of congressional policy on this issue.

On the other hand, if the committee proposal is adopted, the result would be:

State rather than Federal permits for new major facilities and State authority to issue or deny permits for facilities even when such facilities are located on Federal land;

No designation except by statute of any areas as class I without the concurrence of the State;

Elimination of Federal authority to second-guess State efforts to control this program except through judicial proceedings with a Federal burden of proof;

Resolution of the uncertainty of this policy issue by giving clear guidance to all parties, including the courts, as to the basis of nondegradation policy; and

A chance to test policy in actual implementation rather than continuation of hypothetical studies on paper.

#### THE NEED FOR AIR CLEANER THAN THE NATIONAL STANDARDS

In addition to resolving current confusion, the nondegradation provision provides needed protection which the ambient air quality standards do not provide. If the national secondary ambient air quality standards were revised to protect against these damages, achievement of the secondary standards in dirty air areas would be extremely difficult.

If the secondary standards were the only restraint, visibility which is now 100 miles or more in some areas could deteriorate to 12 miles. If humidity is high, visibility would be reduced even more.

Pollutants increasingly are returning to the ground in the form of acid rain which damages valuable water and soil resources. A Conference was held in the summer of 1975 in Columbus, Ohio, where numerous scientists expressed substantial concern over this impact.

Norway has experienced a substantial decline in its fishery resources which have been attributed to acid rain. A 20-year study in Scanda-

navia indicates that acid rain has killed fish and cost the ecology of the area to change. Forest growth and yield have declined. Fish populations have been adversely affected by acid rain in 75 percent of the high elevation lakes of the Adirondack Mountains.

Pollution at less than the concentration allowed by the national standards has been shown to damage vegetation. Acute injury to spruce trees have been reported when average concentrations of sulfur dioxide were only two-thirds the level allowed by the ambient secondary standards.

Studies indicate that other important crops are also damaged at concentrations cleaner than the secondary standards, including wheat, potatoes, spinach, apples, and white pine.

Exposure to low level concentrations of pollutants have health effects. Studies done in Japan since the establishment of the primary standards in the United States indicate that air pollution concentrations lower than the national standards cause increase in reported illnesses. The National Cancer Institute estimates that 60 to 90 percent of cancer is environmentally caused. The secondary standards as presently established make no consideration of this fact.

An increasing number of studies indicate that pollutants are transported for much greater distances than previously thought. This means that emissions from rural areas contribute to urban pollution problems and vice versa. In its report to the Senate Public Works Committee of March 1975, the National Academy of Sciences expressed concern that emissions 300-miles upwind could still contribute to problems in major cities.

Last year, I asked many scientists for comments on the adequacy of existing air standards. The Administrator of the Environmental Protection Agency, Russell Train, provided useful documentation of the limitations of existing standards in his letter of October 10, 1975:

For particulate matter, an annual mean concentration of  $60 \text{ ug/m}^3$  and a mean 24 hour concentration of  $150 \text{ ug/m}^3$  have been set as the secondary standard. Suspended particulates are known to have effects on vegetation, visibility, and manmade materials. At concentrations of  $150 \text{ ug/m}^3$ , visibility may be reduced to as low as five miles.

Plant species vary in their sensitivity to ozone and other oxidants. Toxicity also varies with the composition of the oxidants. Injury has occurred experimentally in the most sensitive species after exposure to  $60 \text{ ug/m}^3$  of ozone for 8 hours. Crop losses could occur as the result of planting genetically uniform, susceptible varieties. Therefore, the current standard,  $160 \text{ ug/m}^3$  for one hour, may not protect all vegetation. Little is known regarding the tolerance of plants under field conditions. The presence of other pollutants and changes in environmental conditions may affect the tolerance of plants for photochemical oxidants. Photochemical oxidants' effects on manmade materials center on the effects of ozone on elastomers and textile dyes. Many elastomers, including natural rubber, are chemically prone to oxidation and therefore, to ozone attack. Cracking of rubber has been noted at  $40 \text{ ug/m}^3$ . Background levels of naturally occurring ozone range up to  $100 \text{ ug/m}^3$ .

The primary and secondary standards for nitrogen dioxide are identical being an annual concentration not exceeding  $100 \text{ ug/m}^3$ .

The current standard appears protective of welfare against damage from direct exposure to atmospheric  $\text{NO}_2$ .  $\text{NO}_2$  may also cause indirect damage to the extent that it contributes to the formation of the nitric acid in acid precipitation. Nitric acid constituted 24% of the acid in precipitation during 1972-1973 in the Eastern U.S.

Conclusive data are lacking on synergistic effects of sulfur oxides and other pollutants, but preliminary results of work being conducted at EPA's Corvallis Environmental Research Laboratory indicate that a sound basis for standards

based on long term growth and processes effects caused by low concentration mixes of sulfur oxides and ozone may be developed in the future.

The phenomenon of acid rainfall is of concern to this agency. A growing body of evidence suggests that acid rain may be responsible for substantial adverse effects on the public welfare. Such effects may include acidification of lakes, rivers, and groundwaters, with resultant damage to fish and other components of aquatic ecosystems, acidification and demineralization of soils, reduction of forest productivity, and damage to crops. These effects may be subject to cumulative build-up as a result of years of exposure to acidic precipitation, but some may also result from 'peak' acidity episodes.

#### INCREMENTS AS THE NATIONAL MEASURE OF CLEAN AIR PROTECTION

The Environmental Protection Agency examined numerous methods to define "significant" deterioration. The examination encompassed methods which would have allowed no change in air quality to methods which would result in deterioration beyond current ambient air quality standards.

The approach selected is referred to as air quality "increments"—a concept which sets forth a precise measure of the change in air quality which any single new facility or combination of new facilities could contribute to the atmosphere in a clear air region.

EPA selected three levels of change or increments. The first, applicable to areas in which preservation of pristine air quality was determined appropriate are related to limits on the capability of air quality monitoring and modeling. The third would permit pollution up to the levels in dirty air regions.

The second level—class II were intended to reflect a balance between air quality protection and reasonable economic growth. To establish these numbers, EPA examined the plants being constructed in the industrial categories most likely to have pollution problems and then projected the probable air quality impact of construction of such sources. The Agency concluded in its documents accompanying its regulations in 1974 that—

Typical coal gasification plants, oil shale processing facilities, and petroleum refineries would not be expected individually to exceed the Class II increments in most areas.

The same statement holds true for the average sized plants in the following categories: fossil fuel-fired steam electric power units; municipal incinerators, kraft pulp mills, iron and steel mills, coal cleaning plants, sulfur recovery plants, lime plants, portland cement plants, phosphate rock processing plants, petroleum refineries, by-product coke oven batteries, sulfuric acid plants, carbon black plants, primary aluminum plants, primary zinc smelters, primary copper smelters, fuel conversion plants, and primary lead smelters. For many of these sources, the average sized plant would be substantially lower than the increment allowed.

Studies since that time indicate that the increments allow even more room for facilities than the first EPA studies indicated. Initially, EPA thought that with regard to a 1,000 megawatt plant—much larger than the average plant now in existence—"In a class II area, a similar source could not be located within 25 miles of the first plant."

Analysis in January 1976 showed that the separation distance had shrunk to 14 miles for high sulfur coal and even less for low sulfur coal—in some cases down to only 1 mile.

Ongoing studies of the Agency indicate that if good pollution control technology is used, "the Senate class II increments will not prevent

construction of major, economically sized industrial facilities." In fact, these studies indicate that with such controls, "more than one plant can be constructed at the same site for pulp and paper mills, oil shale plants, refineries and gasification plants."

These same studies indicate that the cost to the electric utility industry will be a 3-percent increase in capital expenditures. "The Senate proposal is not expected to have a significant economic impact on other major industrial facilities."

This confirms my earlier statement that each time new studies are completed, they show that more room exists within the class II increments at less cost than previously estimated.

#### THE NEED FOR CONGRESSIONAL POLICY

The basic policy issues facing the Congress are not ones that will be eased by further study. They are questions that can and should be answered now:

We can and must clarify the role of States;

We can and must define an appropriate relationship between Federal and State governments relative to these new major facilities;

We can establish now the land areas we value the most and want to protect. We have the knowledge to establish a test to protect those values so long as we maintain a degree of flexibility.

Further study is an important part of the review of any policy as it is implemented. Such study should be, and will be, a companion to the adoption of this legislation. The preferable route will be for Congress to establish the policy, provide the tests contained in the committee bill, and provide the flexibility of State case-by-case judgment in applying the more stringent of these tests. The alternative is to continue a policy that relies heavily on a Federal presence; a clouded policy and a bewildering judicial debate to resolve the issue.

In order to provide further information for Members of Congress and the public on this matter, I ask to have printed in the Record: First, a study from the Environmental Protection Agency compiled April 28, 1976, which describes the extensive industrial growth that can occur under the Senate nondegradation amendment; and second, a letter from Jay Hammond, the Governor of Alaska, expressing strong support for enactment of the Senate and House nondegradation amendments. The letter from Governor Hammond, while addressed to Governor Wallace of Alabama, was sent to the Governors of each of the 50 States.

#### SUMMARY OF EPA ANALYSIS OF THE IMPACT OF THE SENATE SIGNIFICANT DETERIORATION PROPOSAL<sup>1</sup>

##### INTRODUCTION AND CONCLUSIONS

(NOTES.—Tables 1 thru 4 are omitted.)

##### *A. Introduction*

A major purpose of the Clean Air Act of 1970 is "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." The Act is administered by the U.S. Environmental Protection Agency (EPA) and has been interpreted by

<sup>1</sup> S. 3219—Clean Air Act Amendments of 1976—(Section 110 g).

the courts as barring the degradation of air in areas that are cleaner than the National Ambient Air Quality Standards.

The purpose of this paper is to summarize over 8 months of analyses that EPA and its consultants have conducted on the specific impacts of the Senate Bill on selected major industries, including electric utilities, kraft pulp and paper, refineries, synthetic fuel plants, and copper smelters.

### *B. Conclusions*

The principal conclusions of EPA's analyses are:

The Senate significant deterioration proposal will not prevent the construction of major, economically sized industrial facilities. Rather, some sources may have to employ different air pollution control strategies such as further control of sulfur dioxide emissions, relocation at an alternative site, construction of taller stacks or smaller plants, etc.

The Senate significant deterioration proposal allows for the allocation of major industrial sources. Specifically, the minimum required separation distance for economically sized facilities meeting Federal New Source Performance Standards (NSPS) or an equivalently defined control level is 0 to 40 miles for power plants, 0 to 12 miles for kraft pulp and paper mills, 0 to 3 miles for oil shale plants, 0 to 30 miles for gasification plants, 0 to 18 miles for refineries, and 5 to 16 miles for copper smelters. If control beyond NSPS is assumed, the separation distances are reduced to 0 to 31 miles for power plants, 0 to 8 miles for paper mills, 0 to 6 miles for gasification plants, and 0 to 10 miles for refineries.<sup>2</sup>

The Senate proposal gives the States maximum flexibility in determining how close major sources should be located to Federal land such as National Parks and Wilderness areas. If the location of the source would have an adverse impact on the air quality values of the Federal land areas, major industrial sources would have to comply with the Class I increments and locate the following distances away from Federal lands that have been classified as Class I: 5 to 60 miles for power plants, 3 to 28 miles for kraft pulp and paper mills, 3 to 8 miles for oil shale plants, 7 to 40 miles for gasification plants, 12 to 43 miles for refineries, and 13 to 31 miles for copper smelters.<sup>3</sup> However, if the location of the source would not adversely affect the air quality values of the federal land area, the source would not have to comply with the Class I increments and could locate closer than indicated by the previous estimates.

It is expected that the major economic impact of the Senate proposal will be on the electric utility industry. Specifically, the Senate proposal will increase the utility industry's capital requirements over the next fifteen years by a maximum of \$11.5 billion which represents about a 3% increase in the industry's projected capital expenditure in the absence of significant deterioration. The Senate proposal will also increase average residential customers yearly expenditures in 1990 by a maximum of \$28 per year. This is equivalent to an increase of slightly more than 2%.

The Senate proposal will probably require some other industrial facilities to employ different air pollution control strategies such as further control of sulfur dioxide emissions, relocation at an alternate site, construction of a taller stack or a smaller plant, etc. However, most of these sources would be able to comply with the Senate proposal by meeting Federal New Source Performance Standards and locating in areas of flat or moderate terrain.

In the post-1980 period, a Class III designation or a variance from the Class II increment is probably required in some urbanizing areas in order to prevent significant restrictions and/or altered development patterns by 1990. A similar designation would probably be required for large scale energy and industrial development at one location (i.e., energy or industrial parks) and for copper smelters and gasification plants located in very hilly terrain.

#### ESTIMATED SIZE OF MAJOR INDUSTRIAL FACILITIES THAT CAN BE CONSTRUCTED UNDER SENATE PROPOSAL

EPA and its consultants have conducted extensive modeling analyses in order to estimate the size and type of facilities that could be constructed at one site under the Senate proposal. The results of these analyses, which are summarized

<sup>2</sup> The low estimate for each industry assumes flat or moderate terrain while the high estimate assumes hilly terrain.

<sup>3</sup> The low estimate for each industry assumes control beyond NSPS and flat or moderate terrain. The high estimate assumes control equal to NSPS and hilly terrain.

in Table 2 and briefly discussed below, indicate that the size of facility which can be constructed is very dependent on assumptions concerning surrounding terrain, stack height, pollution control technology and worst case meteorological conditions. The results presented in Table 2 represent EPA's best estimate of the maximum size facilities which could be built at one site under the Senate proposal. However, in order to obtain site specific estimates for actual facilities, a case-by-case analysis would be required. Such a review may give results slightly higher or lower than indicated in Table 2.

#### 1. Coal-Fired Power Plants—

Between an 1100 to greater than 4000 mw coal-fired power plant meeting New Source Performance Standards (NSPS) could be built in areas of flat or moderate terrain (i.e., where the surrounding terrain is below the top of the stack). If the source controlled beyond NSPS, a 1250 to greater than 5000 mw plant could be built in flat or moderate terrain. EPA's analyses also show that terrain has an important impact on the size power plant that can be built. Specifically, in areas of hilly terrain (i.e., where the surrounding terrain is considerably above the top of the stack—3.5 to 5% slope) only a 450 mw plant meeting NSPS could be built. However, if the plant controlled beyond NSPS, a 1100 mw plant could be built in the East and greater than a 4000 mw plant in the West.

#### 2. Petroleum Refineries—

EPA's analyses show that refineries in flat or moderate terrain will not be constrained by the Senate Class II increment. Assuming compliance with NSPS, one 300,000 bbl/d fuel oil refinery and two 300,000 bbl/d gasoline refineries could be built at one site. If control beyond NSPS is assumed (i.e., .3% oil), two 300,000 bbl/d fuel oil refineries and three 300,000 bbl/d gasoline refineries could be built at one site.<sup>4</sup> In areas of hilly terrain, fuel oil refineries meeting NSPS may have to reduce capacity to 100,000 bbl/d (a typical refinery expansion). Gasoline refineries may have to reduce capacity to 200,000 bbl/d slightly smaller than a typical new refinery). However, if control beyond NSPS is assumed, even in areas of hilly terrain, typical size new gasoline and fuel oil refineries could be built.

#### 3. Synthetic Fuel Plants—

EPA's analyses show that in areas of flat or moderate terrain typical size oil shale (50,000 bbl/d) and gasification plants (250 mmsecf/d) would not be constrained by the Senate Class II increment. In fact, it would be possible to put several oil shale and gasification plants at one site without violating the Senate Class II increments for sulfur dioxide.<sup>4</sup> However, in areas of hilly terrain only an oil shale plant of 68,000 bbl/d can be built. This is slightly larger than the proposed typical size plant. The comparable limitation for a gasification plant meeting NSPS (where applicable) in areas of hilly terrain is 100 mmsecf/d. However, if control beyond NSPS is assumed, a 330 mmsecf/d gasification plant could be built in hilly terrain. If the constraining terrain feature is closer than 6 miles, a Class III designation may be required to site a 250 mmsecf/d gasification plant. However, use of taller stacks or the selection of a nearby site with less hilly terrain could be feasible alternatives.

#### 4. Kraft Pulp and Paper Mills—

EPA's analyses show that at least two 1000 ton per day kraft pulp and paper mills meeting NSPS with on-site coal-fired generation could be constructed in areas of flat or moderate terrain. Since most kraft mills burn fuels with much lower sulfur content than coal, this analysis is extremely conservative. In areas of hilly terrain a kraft mill capacity of about a 600 tons per day mill could be built if the plant just met NSPS. Unbleached mills have much lower emissions and would be significantly less restricted. In view of the fact that the typical size for new paper mills is about 1000 tons per day and 400 tons per day for expansions at existing sites, it can be concluded that the Senate proposal will not prevent the construction of economically efficient kraft pulp and paper mills.

#### 5. Copper Smelters—

EPA's analyses show that at least a 1500 ton per day copper smelter meeting NSPS could be constructed in areas of flat or moderate terrain. In areas of hilly terrain about a 1000 ton per day facility could be built.<sup>5</sup> If the constraining terrain feature is closer than 4 miles, a Class III designation may be required. However, use of a taller stack or selection of a nearby site with less hilly terrain could also be feasible alternatives.

<sup>4</sup>It should be noted that the National Ambient Air Quality Standards for oxidants may prevent the construction of more than one refinery, oil shale, or gasification plant at one site.

<sup>5</sup>The typical size for new copper smelters is expected to range from 700 tons per day up to 1500 tons per day.

# MINIMUM REQUIRED SEPARATION DISTANCE BETWEEN MAJOR INDUSTRIAL FACILITIES UNDER THE SENATE PROPOSAL

EPA's analyses of the feasibility of collocating major industrial sources under the Senate proposal is summarized in Table 3 and discussed below. As discussed in the previous section, the results in Table 3 are estimates based on assumptions concerning terrain, control technology, stack height and meteorological conditions. A case-by-case review of each site would be required in order to obtain site specific estimates.

## 1. Coal-Fired Power Plants—

More than two 1000 plants meeting NSPS could be constructed at one location in areas of flat terrain. In moderate terrain, two 1000 mw new plants would have to locate up to 28 miles apart in order not to violate the Senate Class II increments. If the plants are located in hilly terrain, the separation distance assuming NSPS could range as high as 40 miles. However, if control beyond NSPS is assumed, more than three 1000 mw plants could be constructed at one location with flat or moderate terrain. For hilly terrain and control beyond NSPS, two 1000 mw plants would have to locate 12 to 31 miles apart.

## 2. Petroleum Refineries—

At least two 300,000 bbl/d gasoline refineries meeting NSPS could be built at the same location without exceeding the Senate Class II increments.<sup>6</sup> The analysis above shows that two 300,000 bbl/d fuel oil refineries meeting NSPS would have to be located two miles apart in order to comply with the Senate proposal. In areas of hilly terrain, refineries meeting NSPS would have to locate 3 miles apart in the case of a gasoline refinery and 18 miles apart in the case of a fuel oil refinery. However, if control beyond NSPS is assumed, two gasoline refineries would be built as close as two miles apart and two fuel oil refineries as close as 10 miles apart. In view of the fact that most new refineries could probably be built along the coast, the results for flat or moderate terrain are more indicative of the probable impact of the Senate proposal. Therefore, it can be concluded that the Senate proposal probably will not constrain the collocation of new refineries.

## 3. Synthetic Fuel Plants—

In areas of flat or moderate terrain, several oil shale or gasification plants could be built at one site without violating the Senate Class II increments.<sup>6</sup> In areas of hilly terrain, two gasification plants meeting NSPS would have to be located 30 miles apart. If control beyond NSPS is assumed, the gasification plants could be located as close as 6 miles apart. The comparative separation distance for two oil shale plants in hilly terrain is 3 miles.

## 4. Pulp and Paper Mills—

EPA's modeling studies indicate that at least two 1000 ton per day kraft pulp and paper plants meeting NSPS could be located at one site in areas of flat or moderate terrain. In areas of hilly terrain, two 1000 ton per day mills meeting NSPS would have to be located about 12 miles apart. If control beyond NSPS is assumed, then two 1000 ton per day mills would have to be located only 8 miles apart in the East and 3 miles apart in the West. Since most new paper mills are projected to be located in remote areas, it can be concluded that the collocation of new mills will not be affected by the Senate proposal.

## 5. Copper Smelters—

Although copper smelters are normally located in isolation and in the vicinity of the copper mine, EPA's analysis indicates that the Senate Class II increment would allow some collocation. The minimum required separation distance between two 1500 tons per day copper smelters could range from 5-13 miles in flat or moderate terrain and up to 16 miles in hilly terrain, assuming that the first facility used 90 percent of the allowable increment.

# REQUIRED DISTANCE BETWEEN TYPICAL MAJOR INDUSTRIAL FACILITIES AND CLASS I AREAS

EPA's analyses of the required separation distance between typical major industrial sources and Class I areas is summarized in Table 4. It should be

<sup>6</sup> It should be noted that the National Ambient Air Quality Standards for oxidants may prevent the construction of more than one refinery, oil shale, or gasification plant as one site.

emphasized, however, that in view of the flexibility in the Senate Bill, these estimates should only be interpreted as guidelines. For example, a source may be required to locate further away than estimated in Table 4 if the State or Federal Land Manager determine that a larger separation distance is required in order to preserve the "air quality related values" of Class I areas. Similarly, a source may be allowed to locate closer to a Class I area if such location would not have an adverse impact on the area's "air quality related values".

#### 1. Coal-Fired Power Plants—

A 1000 mw plant meeting NSPS and located in areas of flat or moderate terrain may have to locate 60 miles away from a Class I area. In areas of hilly terrain, the plant would also have to be 60 miles away. If control beyond NSPS is assumed, a 1000 mw plant in flat or moderate terrain could be located as close as 5 to 20 miles. The comparative figures for hilly terrain are 25 to 42 miles.

#### 2. Refineries—

A 300,000 bbl/d gasoline refinery meeting NSPS and located in flat or moderate terrain would have to locate 20 miles away from a Class I area. The comparative distance for a 300,000 bbl/d fuel oil refinery is 23 miles. If control beyond NSPS is assumed, a gasoline refinery could be built within 14 miles of a Class I area and a fuel oil refinery within 12 miles. For areas of hilly terrain, the corresponding distance assuming NSPS are 37 miles for a gasoline refinery and 43 miles for a fuel oil refinery. If the refineries control beyond NSPS, the distances are reduced to 26 miles for the gasoline refinery and 22 miles for the fuel oil refinery.

#### 3. Synthetic Fuel Plants—

The analysis shows that a 50,000 bbl/d oil shale plant would have to be located 3 miles away from a Class I area in flat or moderate terrain and 8 miles away in hilly terrain. A 250 mmsef/d gasification plant meeting NSPS and located in flat or moderate terrain must be located 19 miles away from a Class I area. In hilly terrain, the gasification plant must be 40 miles away. If control beyond NSPS is assumed, the separation distance for a gasification plant could be reduced to 7 miles in flat or moderate terrain and to 33 miles in hilly terrain.

#### 4. Pulp and Paper Mills—

EPA's modeling results indicate that a 1000 ton per day kraft pulp and paper mill meeting NSPS and generating its power by on-site coal-fired boilers, would have to be located from 10 to 20 miles from a Class I area under flat or moderate terrain assumptions. In areas of hilly terrain, the source would have to be 28 miles away. However, if control beyond NSPS is assumed, the mill could be located as close as 3 miles to a Class I area under flat or moderate terrain conditions and as close as 7 miles under hilly terrain assumptions.

#### 5. Copper Smelters—

A 1500 ton per day copper smelter meeting NSPS and located in areas of flat or moderate terrain would have to locate from 13 to 28 miles from a Class I area. In areas of hilly terrain, the smelter would have to be 31 miles from a Class I area.

### ECONOMIC IMPACT OF SENATE PROPOSAL

The data presented in Tables 2, 3 and 4 show that the Senate significant deterioration proposal will not prevent the construction of major industrial facilities. However, the Senate proposal may require some facilities to employ different air pollution control measures such as further control of sulfur dioxide emissions, construction of taller stacks or smaller plants, relocation at alternative sites with more favorable terrain conditions, etc. While the use of such control strategies will impose additional costs on consumers these additional expenditures must be balanced against the benefit that would result from preventing the degradation of air quality up to the National Ambient Air Quality Standards.

It is expected that the major economic impact of the Senate proposal will be on the electric utility industry. The results of EPA's study<sup>7</sup> are summarized in Table 5.

<sup>7</sup> EPA, *A Preliminary Analysis of the Economic Impact on the Electric Utility Industry of Alternative Approaches to Significant Deterioration*, February 5, 1976.

TABLE 5.—ECONOMIC IMPACT ON THE ELECTRIC UTILITY INDUSTRY OF SENATE SIGNIFICANT DETERIORATION PROPOSAL

	Capital expenditures 1975-90 (billions)	Household expenditures <sup>a</sup> on electricity in 1990 (per year)
Baseline in the absence of significant deterioration.....	\$435	\$1,200
Impact of Senate proposal <sup>b</sup> .....	\$2.4-\$11.5	\$3-\$28
Percent increase due to Senate proposal <sup>b</sup> .....	0.5-2.6	0.3-2.3

<sup>a</sup> Household expenditures on electricity include the direct expenditures for monthly electricity bills and indirect expenditures to producers of other goods and services in order to pay the cost of the electricity used to produce these goods and services.

<sup>b</sup> The low end of the range assumes that BACT is defined by the States to be NSPS or SIP's where more stringent. The high end of the range assumes that BACT is defined to be low sulfur coal plus scrubbers in the West and medium sulfur coal plus scrubbers in the rest of the country.

As indicated in the above table, the Senate proposal would increase the industry's capital requirements over the next ten years by a maximum of \$11.5 billion. This represents a maximum increase of 2.6% in the industry's projected capital expenditures of \$435 billion in the absence of significant deterioration. In order to finance the required expenditures, average expenditures per household in 1990 would increase by a maximum of \$28 per year. This is equivalent to an increase of about 2.3%.

With regard to other major industrial facilities, Tables 2, 3, and 4 support the conclusion that most facilities will not have to employ different air pollution control strategies. Rather, most of these facilities would be able to comply with the Senate significant deterioration requirements simply by complying with the current requirements of the Clean Air Act (i.e., New Source Performance Standards). However, a few of these facilities may have to relocate to areas of flat or moderate terrain, control beyond NSPS, build a taller stack or smaller plants, etc.

STATE OF ALASKA,  
OFFICE OF THE GOVERNOR.  
Juneau, March 11, 1976.

HON. GEORGE C. WALLACE,  
Governor, State of Alabama,  
State Capitol, Montgomery, Ala.

DEAR GOVERNOR WALLACE: As you know, the U.S. Senate and the U.S. House of Representatives are currently considering amendments to the Clean Air Act. There is an excellent chance that the bills will be considered on the floor of the Senate and House within the next month. When the bills reach the floor, it is predicted by many experts that there will be vigorous attempts to amend or delete the provisions which form the very heart of the Clean Air Act. We, as leaders of our states, will undoubtedly be called upon to take a stance on the bills as they were reported to the floor, and on any proposed floor amendments. I am writing to encourage you to oppose amendments which weaken the provisions of H.R. 10498, and the Senate bill as it was reported out of the Public Works Committee.

Of the many difficult and controversial issues contained in the 1976 Amendments to the Clean Air Act, the concept of prevention of significant deterioration of air cleaner than secondary standards is perhaps the most complex, and the most misunderstood issue in the proposed legislation. The prevention of significant deterioration issue contained in the 1970 Act is currently being litigated in the courts, as well as being debated in the halls of Congress. The policy position of the National Governors' Conference is that this issue must be addressed by Congress; not by the courts.

Unfortunately, some opponents of the prevention of significant deterioration concept have muddled the quality of public debate on this issue by circulating information which indicates that the Senate and House bills would stop all growth. Such information is totally inaccurate. Neither bill would stop growth; they simply require that new point sources of air pollution must install efficient pollution control equipment. In addition, both bills provide for an extra tier of air quality protection for national parks, international parks and wilderness areas. I think you would agree that protection of air quality in these areas of

national interest is warranted. If the opponents of prevention of significant deterioration are successful in their attempts to eliminate the concept from the Act, we will effectively have abandoned a national policy of protecting existing high quality air, and instead will have adopted a national policy of allowing clean air to become uniformly dirty. To adopt such a policy would not be in the public interest.

The overall policy thrust of the House and Senate bills is to place authority for implementation of the Clean Air Act in the hands of state and local governments. The bills also provide workable mechanisms to continue our efforts to solve existing pollution problems, and to protect areas which have pristine air. In short, the bills continue to place clean air as a national goal, and they grant maximum flexibility to the states to achieve and maintain this goal.

Therefore, I strongly urge you to communicate your support of HR 10498 to Congressman Paul G. Rogers, Chairman of the House Subcommittee on Public Health and Environment. I also encourage you to inform Senator Jennings Randolph, Chairman of the Senate Public Works Committee, of your support for the Clean Air Act Amendments which recently were approved by that body. In addition, I suggest that you oppose any floor amendments which would eliminate the concept of prevention of significant deterioration from the Clean Air Act.

Best wishes and warm regards.

Sincerely,

JAY S. HAMMOND,

Governor.

Mr. McGEE. Within the week, the Senate will take under consideration S. 3219, the Clean Air Act Amendments of 1976.

Contained within the bill is one provision of particular importance to the future of quality life in Wyoming—section 6 dealing with the prevention of further *significant deterioration*. [Secs. 160–169]

It is my intention to resist any proposal that would delete or delay the implementation of nondegradation. I support the proposal that a study of the implications be made, but I believe that any changes which result from such a study can be implemented by Congress at a later date. For the time being, however, it is my opinion that we should make every effort to get underway with this program and resolve the many longstanding uncertainties and lawsuits that have arisen over the authority of the States to supervise and maintain air quality standards of their own.

In this respect, section 6 represents great improvement over existing policies and it greatly expands the States' role in all aspects of nondegradation policy and implementation. It does, at the same time, further restrict the role of the Federal Government in these areas. Moreover, section 6 would work to further enhance the existing governmental bodies in the State of Wyoming such as the industrial siting council and the land use planning commission for the self-determination of future growth in Wyoming.

We in Wyoming are quite proud of our accomplishments in the creation of stringent and high standard air quality regulations. This bill will in no way defeat or erode this proud accomplishment. Rather, it will serve to preserve and promote the strides Wyoming has made in the protection of its air.

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#### A POSITION STATEMENT ON PROPOSED SIGNIFICANT DEGRADATION AMENDMENTS

May 11, 1976

Mr. Moss. Over the past few months I have often expressed concern about the need for more information regarding the

economic effect of implementing a national policy of nondegradation. A major area of concern for me has existed in the lack of State and local community input into the decisionmaking process. I have expressed the need for a period of study of the nondegradation section of the bill proposed by the Public Works Committee.

In tune with this need for additional State and local input, I ask to have printed in the Record a position statement of the Utah Air Conservation Committee and the Utah State Division of Health. I think their proposals deserve the attention of the Congress.

#### POSITION STATEMENT ON PROPOSED SIGNIFICANT DEGRADATION AMENDMENTS TO FEDERAL CLEAN AIR ACT

Because of the need to accommodate population growth and to remain economically viable. Utah has adopted a policy of balance between the extremes of pristine purity and unlimited environmental degradation. Pristine purity is dismissed as an impractical goal and uncontrolled pollution is an unacceptable alternative, leaving a carefully planned and executed environmental quality control program as the only viable course.

After studying this problem at great length, the Utah Air Conservation Committee developed a pollution control procedure now embodied in the Utah Air Conservation Regulations, and further defined in the State Implementation Plan, both of which have been adopted by the State Board of Health. This plan includes:

1. Legal enforcement of National Ambient Air Standards.
2. Definition of significant degradation (This is defined as "preventable degradation", i.e., additional atmospheric degradation that would result if a source were not controlled by the best technically feasible methods.)
3. Requirement of a construction permit for any new source or modification of an existing source. (The permit may issue only if the evaluation of the plans and specifications indicates all State regulations will be met.)
4. Prohibition of emissions of any pollutants in areas of high air quality unless shown to be controlled to afford the highest efficiencies and lowest discharge rates reasonable and practicable.
5. Statewide requirement for selection and operation of air pollution control equipment so as to afford the highest efficiencies and lowest discharge rates reasonable and practicable, taking into account technical feasibility of controls, cost-benefit relationships and other pertinent points.

The Staff and Committee are convinced that these represent practical, achievable controls and that they will produce a suitable level of air quality, without blocking industrial and population growth. We know of no other procedure which addresses the question of "significant degradation" in a practical way.

Federal laws, including the Federal Clean Air Act, which have resulted in rather complete domination of State Environmental Quality Programs, are improper to the extent that they place authority for detailed program control at the Federal level where there is the least capability to accomplish valid, effective controls. For illustration, one of the outstanding problems created by the Clean Air Act was the setting of irrevocable dates for accomplishment, many of which turned out to be unattainable. The proposed amendments, purportedly to correct inadequacies in the Clean Air Act, again set irrevocable dates for accomplishment, many of which surely will be impossible to meet.

The significant degradation portions of the Federal Clean Air Act Amendments now being considered in Congress, which are the subject of this statement, have the potential of making a bad situation worse. They superimpose a new, radically stringent set of ambient air standards over existing standards even before procedures for achieving the former have been developed and before the effects of meeting either have been determined. For example, it has not been established that a net benefit will result from requiring SO<sub>2</sub> removal from power plant exhaust gases under certain conditions of limited plant size and low sulfur fuel. Exactly the opposite is still a possibility due to uncertainties in the need for SO<sub>2</sub> removal, the reliability of the processes, and the disposal problems resulting.

We are concerned that the specific detail included in the proposed amendments implies a level of technical knowledge with respect to air quality predictions that is nonexistent today. While it is true that a number of computer programs have been developed specifically for the purpose of such predictions, a comparison

shows that results differ as much as several orders of magnitude. As the programs become more sophisticated it is necessary to make more and more assumptions, all of which are questionable, particularly in view of the dearth of micrometeorological data, especially for terrain like Utah's. Although modeling is widely used as a quasi-standard predictive method, the resultant pollutant concentrations are often at variance with measure concentrations.

The uncertainty inherent in modeling results, particularly when applied in Utah, is illustrated by a study conducted at the Kaiparowits site. Four well-known and widely used models were used to predict the concentration of fluorescent particles which would occur at each of 20 locations around the site when a known quantity was released at the site. The actual quantity was also measured at each location. The accompanying table summarizes the results. The first column lists the measured values and the next four list the corresponding predicted values.

In actual practice, the worst meteorological conditions imaginable are often used in a model to predict the worst case concentrations.

Obviously, costly mistakes can be avoided by following a practical program instead of a program demanding technology which hasn't arrived yet.

Utah is not taking a position of uncontrolled pollution. In fact, the record will show that in other, older environmental programs Utah is "out front" in pollution control. We have arrived there by being practical, and we want to continue in that stance in air pollution control.

We acknowledge problems, but not any that are radically different from those we faced in other environmental programs. We think reductions of visibility related to emissions of pollutants from modern industrial facilities could occur, and we haven't yet in effect a practical monitoring scheme to evaluate this. We do not believe this justifies blocking economic development. The absence of good tools to predict concentrations of various air pollutants results in some uncertainties which, in our experience, so far, lead to predicted concentrations considerably higher than actually occur.

Even not allowing for new technology of pollutant removal which is sure to emerge, we believe our approach to "significant degradation" is a good balance for our society.

The proposed mandatory class I ruling for certain federally administered areas is really land use planning using air pollution law as a tool. We should recognize this as a land use planning problem, and decide it on that basis, instead of hiding it in the Clean Act Act.

In summary, we are convinced that Utah and possibly other States with undeveloped resources will experience a paralysis of economic growth and resource development if the proposed significant degradation portions of the Clean Air Act Amendments are adopted.

#### MEASURED VERSUS MODELING RESULTS

	Modeling predictions			
	1	2	3	4
Measured result:				
119.....	535	91	0	-----
219.....	693	2,690	1	-----
50.....	467	97	0	-----
87.....	195	1	0	-----
257.....	384	322	0	-----
1,214.....	536	1,812	18	-----
213.....	257	134	0	-----
36.....	42	1	0	-----
60.....	44	2	1	82
10.....	103	11	0	-----
19.....	160	72	71	-----
24.....	1,148	2,001	0	-----
90.....	536	1,717	14	-----
66.....	273	81	0	-----
1,278.....	1,320	0	0	-----
250.....	276	195	43	760
282.....	164	44	0	430
170.....	116	2	0	-----
19.....	37	0	0	290
70.....	88	13	0	150

Note: Values are fluorescent particles per hour.

May 25, 1976

Mr. Moss. Economic growth is essential to this Nation. Nothing will get this country moving better than some certainty in our building industry. The builders can boost the economy if they can be turned loose to build. I believe Senator Muskie's Clean Air Act Amendments of 1976 are a detriment to economic growth. My amendments should be adopted to give us more information. The National Home Builders agree with me. I ask that their resolution of support for the Moss amendments be printed in the Record.

SPECIAL COMMITTEE ON FEDERAL GOVERNMENTAL AFFAIRS, NATIONAL COMMISSION  
ON AIR QUALITY STUDY

Whereas, the Senate is considering legislation (S. 3219) which would, among other things, enact provisions designed to prevent the significant deterioration of air quality in those areas of the country whose air quality is cleaner than any existing ambient air standard, and

Whereas, no reliable information exists on the impact the proposed significant deterioration provisions will have on the economic growth of the nation;

Whereas, Senator Moss has proposed amendments to S. 3219 which will strike the section dealing with significant deterioration and will direct the National Commission on Air Quality to conduct a one-year study on the economic, technological and environmental effects of preventing significant deterioration of air quality; Now, therefore, be it

*Resolved*, That the National Association of Home Builders urges the Senate to adopt the Moss amendments to S. 3219.

May 25, 1976

Mr. McCLURE. During the past several weeks substantial concern has been generated over the "*significant deterioration*" provision contained in S. 3219 as reported from the Senate Public Works Committee.

On May 21, Senator Howard Baker, ranking minority member of that committee, summed up what I think is the concern of all of us who worked to develop this provision about the information that is circulating regarding its potential impact.

I think his statement helps to clarify our intent in the drafting of this provision and I ask that Senator Baker's statement before the Aluminum Association be printed in the Record.

STATEMENT OF SENATOR HOWARD BAKER

I want to applaud the recently announced campaign of the Aluminum Association to establish an effective communications program to inform government about the Aluminum industry. There are several legislative proposals evolving in Congress which will have an important impact upon your industries and upon which your association can have a major impact.

It is always of great concern to me that Congress obtain sufficient information and background from industry regarding the potential economic impacts of our actions in order that we may accurately and intelligently assess their effect. This is especially true in the area of environmental policy.

By the same token if Congress is to be responsive to the industrial sector it is imperative that the actions of Congress also be accurately conveyed to industrial representatives.

This is a matter of serious current concern to me in view of reaction to the clean air legislation recently reported by the Senate Public Works Committee and the House Interstate and Foreign Commerce Committee—especially the significant deterioration provisions of these bills.

I want to speak to you regarding my observations on significant deterioration—not only because it is a major environmental policy of tremendous potential im-

portance to your industry, but because it is a significant case study on the subject of industry-government communication.

For background: In 1972 the Supreme Court affirmed the judicial interpretation of an ambiguous policy statement in the Clean Air Act and created the concept of significant deterioration. The Court's decision set in motion regulatory machinery at EPA and the situation has been in litigation and confusion ever since.

In frustration environmentalists, industry and public officials turned to Congress demanding clarification of the situation.

Congressional consideration of the issue began, with a thorough review of the philosophy underlying the policy. In drafting the air pollution strategy of the 1970 Act, Congress had given careful consideration to the need for cleaning up dirty areas, but development of a policy for protection of the vast clean air regions of the nation was largely overlooked.

Early in the debate last year the Senate Committee decided unanimously that such a strategy was unacceptable. It certainly was not and is not the intent of Congress in specifying national standards which identify potentially dangerous air quality conditions to make those levels the targets or goals for pollution control efforts in the nation's clean air areas.

Having made this decision the hard work of developing a workable strategy for protecting clean air areas began.

The Senate Committee and its environmental subcommittee held 45 markup sessions on proposed Clean Air Act Amendments during this and the previous session of Congress. Many of these were spent in discussion and revision of the significant deterioration provision. These discussions utilized background developed in hearings held on the issue in each session of Congress from 1972 to 1975.

Amazingly notwithstanding this careful study, it is suggested that we postpone enactment of a clear significant deterioration strategy and study the matter further. And the Moss Amendment, which makes this proposal, has apparently gained some support among major industrial groups included under the coverage of the bill's program.

If the Moss Amendment passes two things will most certainly happen which should be of substantial concern to all industry. The court-ordered EPA regulations will remain in effect, and litigation pending against those regulations will continue to cloud long range prospects regarding the construction of major industrial facilities for years.

But, I am dismayed at the opposition to the Committee's bill for a further reason. There has been substantial confusion over the proposal and much of the criticism I have read and heard misconstrues its effect. The import of the criticism is that the members of the Committee have given little regard to the economic and energy implications of their action. That is totally inaccurate.

Let me tell you what the bill does and does not do—especially in reference to the EPA regulations which the Moss Amendment would leave in effect.

All of the proposals advanced so far including the Senate bill contain a provision for stringent protection of certain areas such as national parks, which are designated Class I areas.

EPA's regulations provide that any federal area can be designated a Class I area at the sole discretion of the Federal Land Manager in Washington. Early proposals offered in our Committee would have designated almost every imaginable national area a Class I area—parks, wildlife refuges, recreation areas, monuments, even meandering scenic rivers and seashores.

The Committee bill specifically limits Class I to certain major parks and wilderness areas. The total land area included under the Senate provision comprises slightly more than 1% of the United States and no federal land may be redesignated Class I unless the State government concurs.

There has been a great deal of concern about so-called buffer zones around these Class I areas. These buffer zones are the radius around Class I areas in which construction of major facilities will be predictably curtailed because of the application of arbitrary pollution limitations within the area.

EPA's regulations and the subcommittee bill both provided for these buffer zones.

The Committee bill rejected these arbitrary limitations and bases protection of parks upon a specific finding that emissions will cause actual harm to the values for which the area was established on a case by case basis.

Additionally, the Committee proposal would turn the EPA permit program over to the States with specific direction that economic and energy impacts be given appropriate consideration in the development of technological requirements.

State control, flexibility and clarity of application are the hallmarks of the Committee's effort on significant deterioration. The Committee carefully and I believe skillfully redrafted the provision to assure that while it provides real protection to clean air areas it allows for realistic industrial growth. And the Committee provided for continuing review of the program to assure that appropriate "mid-course corrections" can and will be made to assure that our significant deterioration mechanism accurately tracks this goal.

I am convinced that the confusion over significant deterioration will be resolved and a rational, workable strategy enacted.

But the problem of coordinating Congressional environmental activities with industrial interests remains.

Over the past several years both government and industry have gained valuable experience under the first generation of environmental programs. That experience has often indicated the need for "mid-course corrections."

Unfortunately our knowledge of environmental issues has gotten ahead of our ability to coordinate and communicate that information in the legislative process—as is evident from the experience with significant deterioration.

I am encouraged that organizations like the Aluminum Association have begun an earnest effort to mobilize the mechanism for presenting industry's case to Congress.

I would leave you with two thoughts which I hope will be helpful in this effort:

First, many, I believe a majority, in Congress are determined to focus our environmental programs on rational goals consistent with economic and energy realities. But make no mistake, the environment remains a real and vital issue across the nation.

Second, among the members most instrumental in drafting environmental legislation there is a fervent desire for objective, knowledgeable input on environmental programs and issues. Much of the effort in drafting environmental legislation has been spent in interpretation of overstated or biased information. The organization that established the competence to understand environmental programs and the restraint to speak forthrightly on environmental issues will find an eagerly receptive ear in Congress and can play a significant role in evolving the second generation of major environmental laws.

Mr. Moss. I ask that a statement prepared by the National Construction Industry Council be printed in the Record.

STATEMENT ON BEHALF OF THE NATIONAL CONSTRUCTION INDUSTRY COUNCIL FOR  
SUBMISSION TO MEMBERS OF THE UNITED STATES SENATE

CLEAN AIR ACT AMENDMENTS, S. 3219

The National Construction Industry Council, formed in 1974, speaks with a single voice for 30 (thirty) associations in the construction industry representing contractors, suppliers, design professionals and others associated with our industry.

The following members join in this submission:

- American Concrete Paving Association.
- American Consulting Engineers Council.
- American Institute of Architects.
- American Institute of Steel Construction, Inc.
- American Road Builders Association.
- American Society of Civil Engineers.
- American Society of Landscaping Architects.
- American Subcontractors Association.
- Associated Builders and Contractors, Inc.
- Associated Equipment Distributors.
- Associated General Contractors of America, Inc.
- Associated Landscape Contractors of America, Inc.
- Ceilings and Interior Systems Contractors Association.
- Concrete Reinforcing Steel Institute.
- Council of Construction Employers, Inc.
- Mechanical Contractors Association of America, Inc.
- National Asphalt Pavement Association.
- National Association of Plumbing-Heating-Cooling Contractors.
- National Constructors Association.
- National Council of Erectors, Fabricators, and Riggers.

National Crushed Stone Association.  
 National Electrical Contractors Association.  
 National Society of Professional Engineers.  
 National Utility Contractors Association, Inc.  
 Portland Cement Association.  
 Power and Communications Contractors Association.  
 Prestressed Concrete Institute.  
 Producer's Council, Inc.  
 Sheet Metal and Air Conditioning Contractors National Association.  
 Society of American Registered Architects.

NCIC collectively, and its member associations individually, have reviewed the subject legislation at great length and with a sincere recognition of the need for a clean, healthy environment to which all our members subscribe. NCIC believes that legislation such as this must reconcile the need for protecting our environment with the need to accommodate population growth and maintain a viable economy. Unfortunately, the non-deterioration provisions included in the Clean Air Act Amendments, currently being considered in Congress, and which are the subject of this statement, do not have the effect of achieving such a balance. These provisions superimpose a radically stringent set of standards over existing standards before the effect of meeting either have been determined. Further, this is being done at a time when this country is engaged in a precarious recovery from a severe recession. Congress has not had time to ascertain the effects such a policy would have on economic recovery, employment, energy conservation and other national goals. The uncertainty surrounding the concept of non-deterioration could easily be dispelled if Congress would endeavor to study the ramifications of such legislation.

For this reason, the National Construction Industry Council is in complete agreement with the amendments offered by Senator Moss which would prohibit the adoption of non-deterioration as a policy until a thorough investigation of the impact and consequences of the proposal has been conducted.

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#### PERFORMANCE WARRANTY [Sec. 207]

Mr. BENTSEN. During the past several weeks, Members have received several communications opposing my proposal to amend the performance warranty provisions of S. 3219. Serious charges have been made with which I strongly disagree, and I would like to take this opportunity to answer them.

**First. Charge:** Reduction of the performance warranty ignores the objective of clean, healthy air and removes any financial incentive for manufacturers to produce a durable emission control system that will last for 5 years/50,000 miles.

**Answer:** To the contrary, provisions of the act requiring the automaker to build durable emission control systems and the means by which EPA enforces those requirements will remain intact.

The 1970 Clean Air Act specified the levels by which auto pollutants were to be reduced and the deadlines by which they were to be attained. The act also specified the means for insuring compliance by the automakers. Under section 206(a), for instance, the manufacturers must obtain EPA's certification that a given vehicle and engine model will meet the requisite emission control standards before it can be mass-produced and marketed.

Once the model is certified, the automaker is required under section 207(a) to warrant that each new motor vehicle and new motor vehicle engine is "designed, built, and equipped" so as to conform at the time of sale with the requisite standards and that each is "free from defects in materials and workmanship" which might cause it to fail to conform to the standards during its useful life, a period which the act defines

as 5 years or 50,000 miles, whichever occurs first. This production warranty went into effect for all 1972 and later model year vehicles and simply means that if a particular vehicle should fail to comply with a pollution standard as a result of something the manufacturer did or did not do, the defect must be remedied at its own expense and not that of the owner's.

This production warranty is one of two warranties mandated by the act, and it requires the manufacturer to build vehicles which meet the standards at the time of sale and continue to meet them for 5 years/50,000 miles, a period not reduced by my amendment. The manufacturer's liability under this 5/50 production warranty would remain with the adoption of my amendment.

The act also provides the means for insuring that this production obligation is met. **Section 206(b)** authorizes the environmental Protection Agency to test vehicles as they come off the assembly line. To date, the Agency has not been performing this test, but it is on the verge of initiating such a procedure. The 1976 amendments to the act require that the test be initiated no later than model year 1977.

Additionally, **section 207(c)** authorizes the Agency to require the automaker to recall a given model run for needed repairs if the Agency determines that a substantial number of that model or engine type do not conform to the standards when in actual use. The determination, and the resulting recall, can be made anytime during the 5-year/50,000-mile period. It is an authority which will in no way be diminished with the adoption of my amendment.

Thus, does the act, through its production warranty and related provisions, require the automakers to obtain the Agency's certification that new vehicles meet the standards before the model can be produced, that they be subjected to an assembly line test to determine compliance as they leave the factory, and that they continue to meet the standards while in actual operation, subject to a recall order if they do not. These provisions are not imposed by the performance warranty, nor are they altered by my amendment.

Second. Charge: Reduction of the performance warranty is anti-consumer because it would shift the burden and/or expense of repairing a faulty emission control system to the owner

Answer: The House Small Business Committee, the one congressional committee that has investigated the performance warranty, has reached precisely the opposite conclusion; that is, that implementation of the 5-year/50,000-mile performance warranty will actually be, in its description, "anticonsumer," and I agree for the following reasons:

Cost: Warranties have a price; they are never free. Automakers typically add the expected cost of implementing a warranty to the initial purchase price of the vehicle, and that practice will be repeated when they become liable under the 5/50 performance warranty.

In 1974, a spokesman for Ford told the House Small Business Committee that the cost of replacing a converter would be about \$160. Repair or replacement of parts which might have caused the system to fail would be extra, perhaps as much as \$100. This expense can be expected to be added to the price of a new car, thereby increasing its cost by \$160 to \$260.

Because of the way warranty costs are recouped by the manufacturers, the car purchaser would have paid this sum, whether he ever needed repairs or not. As we consider amending the performance warranty requirement, we should be aware of the potential for windfall profits if it is not altered.

The cost would be even greater if the carowner invalidated the performance warranty by improperly maintaining his vehicle. If he had to repair the car himself, the total cost could well be \$320 or more for many vehicles—the \$160 to cover the cost of the repair when it was performed plus the \$160 included in the purchase price.

That sum—from \$160 to \$260, representing the real cost of the performance warranty—is far greater than the \$1 figure which the committee report states has been the cost of the warranty to the carowner to date. Manufacturers have not been liable under the performance warranty because of the lack of a short emissions test and have, therefore, experienced no financial liability under it. That will change once the warranty is required.

The 5/50 performance warranty could thus be extremely costly to the carowner, a cost imposed by public policy. That imposition can hardly be justified unless coverage is reasonably assured, which it is not.

Coverage is neither blanket nor automatic. Under the act, the automakers are permitted to condition their performance warranty upon "proper" care, maintenance, and operation of the vehicle. The act permits this because a car, in operation for 50,000 miles, needs periodic maintenance, and should the owner fail to provide that care and cause the emission control system to fail holding the manufacturer liable for the owner's negligence would be unfair.

To obtain compensation under the performance warranty, the carowner will have to prove that he has had the routine maintenance performed according to the schedule outlined in the owner's manual, that original equipment manufacturer's parts or their certified equivalents have been used, and that they have been properly installed. If, for example, the required tune-up was performed on schedule and approved parts were used, the warranty might still be invalidated if the plugs were not properly gapped, the timing not properly set, or the carburetor not properly adjusted.

The carowner would then have nothing for the sum he paid for the warranty when he purchased the car and would have to pay for the repairs himself.

Reduced service options. In part due to these considerations, the carowner will feel a pressure, subtle or otherwise, to have his service work performed by his franchised dealer so as not to risk invalidating his performance warranty. The decision as to who can best service a vehicle—the franchised dealer, the independent, or the do-it-yourselfer—should be made by the individual himself on the basis of price, quality of work, and convenience in a market free from a public policy which strongly encourages the selection of one sector of the aftermarket over all others.

"Haggling." The crucial determinant for coverage under the performance warranty will be whether the vehicle has been "properly" maintained. The automaker might refuse to compensate for the needed

repairs by simply alleging that the most recent tune-up was not properly performed. Depending upon his insistence, the carowner might well find himself without the compensation he believed was rightfully his.

As the National Academy of Sciences observed in a 1973 publication entitled "Feasibility of Meeting the 1975-1976 Exhaust Emission Standards in Actual Use"—

When a (vehicle) manufacturer adjusts a car that has been maintained by an independent garage, he can claim that he found sign of "improper" maintenance. The question of his liability under the warranty would then have to be settled in the courts.

I wonder how many carowners would go to the trouble of litigating their grievance. Whatever the decision, the carowner would be left with a bitter experience, the car dealer would probably have lost a customer, and the warranty would be forgotten.

Impact upon the do-it-yourselfer. An ever-growing number of Americans are choosing to service their cars themselves. According to a recent study published by the Automotive Parts & Accessories Association, Inc., no less than 60.8 percent of all carowning households are doing some repair work on their vehicles. Their motivation should be obvious. These carowners want to save themselves some of the expense of operating a motor vehicle. That motivation will remain, and we should be aware of it because everytime the do-it-yourselfer services his car, he risks invalidating the warranty. The result—no coverage for the \$160 to \$260 he paid at the time of purchase.

Third. Charge: Reduction of the warranty would, in the words of last Friday's statement, "simply protect the automobile industry at the expense of the consumer and the public."

Answer: That statement represents both a misconception of the intent of the sponsors of the amendment and a misunderstanding of the consequences of implementing a 5/50 performance warranty.

The 5/50 performance warranty can quite rightly be considered a tremendous advantage to the auto manufacturers. I am convinced that it will only increase the share of service work performed by the manufacturers through their franchised dealers. It will give them a competitive advantage against the independents in the aftermarket industry, one that they do not enjoy in a marketplace free of this Government-imposed tie-in.

I believe the essence of the case against my amendment consists of two points—the alleged diminution of manufacturer responsibility and the alleged burden imposed upon the carowner. For the aforementioned reasons, however, I believe those charges can be satisfactorily refuted. The House Small Business Committee has concluded that it is both "unnecessary"—because of the liability imposed by the section 207(a) production warranty and the existing enforcement mechanism—and "anticonsumer"—for the requirements and restrictions it will impose upon any carowner who wishes to maintain his coverage.

The House committee's third conclusion was that implementation of the 5/50 performance warranty would be "anticompetitive" as well. A warranty of that length, it noted, together with the requirements needed to insure continued coverage would lead to a tie-in of the carowner to the auto manufacturer for the vast majority of even the most routine repairs and service work performed on the vehicle. I remain

convinced that as long as we maintain the performance warranty at 5/50, the pressure to return to the franchised dealer to insure continued coverage under that warranty and the resulting competitive disadvantage given the independents—the gas stations, independent repair shops, and even the do-it-yourself—will remain.

I believe the anticompetitive aspects of this performance warranty, because of the potential enormity of their impact, deserve our closest attention, too, and I would like to explain the basis of my concern.

The aftermarket service industry has long been marked by a multiplicity of competing businesses in which success has depended upon price, quality of work, and convenience. It currently includes some 1,700 independent parts manufacturers, 22,000 parts distributors, and some 420,000 independent repair facilities. Each year, this independent segment of the service industry accounts for 80 to 85 percent of all of the service work performed in garages across the country.

I would emphasize that the American carowner has repeatedly demonstrated his preference for the work provided by the service centers which are independent of the major automobile companies. The intense competition has helped to restrain the prices charged, and the record of performance indicates that they can provide quality work.

Many of these service establishments are commonly referred to as "gas stations." Though deriving much of their income from marketing petroleum products, the average station earns about a third of its revenues from automotive service and repairs. Few could remain in business if their service work were to decline significantly, and yet that would be a serious possibility with implementation of the 5/50 performance warranty.

I cannot overemphasize my concern that this public policy would be placing the independent at a serious competitive disadvantage, a consequence which over the longer term would be as detrimental to the motorist's best interests as to the small businesses which would be most directly threatened by it.

The carowner's service options would be restricted as an ever-declining number of repair facilities were available to him.

The major auto companies could well have at last acquired a large share of the aftermarket industry, a dominance which they have thus far failed to achieve.

The restraint on prices for the service performed would be eroded as a declining number of establishments competed for this work.

Surely, none of us can be pleased with the prospect of the decline of the independent sector, and yet I am concerned that it remains a distinct possibility if the 5/50 performance warranty is required by law and is implemented. In the pursuit of our goal to reduce auto emissions, we would have weakened one of the strongest components of the entire industry, the independents. And this, all because of a warranty requirement which is not needed to insure that new cars are equipped with durable emission control systems.

I hope these comments have helped to clarify why reducing the currently mandated performance warranty is so essential. I would like to conclude this statement by asking that the text of my response to the Consumer Federation of America's letter on the Bentsen performance warranty amendment be printed in the Record.

MAY 4, 1976.

MS. CAROL TUCKER FOREMAN,  
*Executive Director, Consumer Federation of America,*  
*Washington, D.C.*

DEAR MS. FOREMAN: Thank you for your recent letter on my proposed amendment to the performance warranty of the Clean Air Act. I regret that you have decided to oppose it, for I believe, in the words of the House Small Business Committee, that it is "unnecessary, anticompetitive, and anticonsumer".

I would like to comment briefly upon the reasons you enumerate as the basis for your opposition.

1. Under Section 207(b) performance warranty of either 5 years/50,000 miles or 18 months/18,000 miles, the manufacturer's liability is not absolute, and compensation to the carowner is not automatic. To be eligible, he must first prove with written documentation that he has "properly" maintained his car, i.e., has had routine maintenance performed according to the schedule outlined in the owner's manual, has used original equipment manufacturer's parts or their certified equivalent, and has had them installed properly. If the carowner has failed to observe any of these requirements, he has invalidated his warranty and is not eligible for compensation under it.

In that case, he will have lost the amount added to the purchase price to cover the cost of the performance warranty (see point 2) and will have to pay for the repairs himself. As with any warranty, coverage is paid for in the purchase price even if the carowners never seeks compensation.

Finally, the Section 207(c) recall provides for manufacturer liability if a substantial number of particular model are found to fail the applicable standards during the 5/50 period. You are well aware that my amendment does not reduce the duration of that liability.

2. Reduction of the performance warranty will not diminish the manufacturer's obligation to produce durable, effective emission control systems. The Section 207(a) production warranty requires the manufacturer to warrant that each new motor vehicle and new motor vehicle engine is "designed, built, and equipped" so as to conform at the time of sale with the requisite standards and that each is "free from defects in materials and workmanship" which cause the vehicle and fail to conform with the standards during its useful life—which remains under my amendment at 5/50.

That obligation, in combination with the production-line test and the recall provision, will require the automakers to produce systems which meet the standards at the time of sale and continue to do so throughout the 5/50 period. My amendment in no way reduces that obligation.

The \$1.00 cost you refer to is attributable to the implementation of the 207(a) production warranty. The House Small Business Committee has determined the cost of a 5/50 performance warranty to be \$160 to \$260, a sum which will be added to the purchase price of the car once a short emissions test is found and the performance warranty is being implemented.

3. The Senate Committee bill prohibits the automakers from explicitly conditioning their performance warranty upon service provided by their franchised dealers, but the automaker, for example, would not be liable for the repair of a system failing to meet the standards because the last tune-up was "improperly" performed—if the plugs were not properly gapped or the timing was not properly set—both of which would affect the performance of the catalytic converter. Having been denied compensation, the carowner would be without the coverage he had paid for when he purchased the car. He would certainly give second thought as to whether he would again risk invalidating his performance warranty by having any independent tune his car the next time. That concern, multiplied hundreds of thousands of times, is the subtle pressure which may well direct carowners back to their franchised dealers, a pressure which statutory prohibitions on conditioning the warranty cannot prevent.

4. A voluntary parts certification program is certainly needed, and it is part of my proposed amendment. I believe the certification process will help with the parts problems, but it does not address the problem of who provides the service.

5. The 207(b) performance warranty is not needed to trigger the recall order authorized by Section 207(c). The obligation to produce an emission control system to last 5 years/50,000 miles will remain because the production warranty liability will not be amended. A recall can be initiated whenever EPA determines that a substantial number of a particular model are failing to meet the standards.

Reference to safety recalls and inspections is appropriate. In many states, carowners are required to pass a rigorous safety inspection each year. If a vehicle fails, needed repairs must be made. No stipulation, however, is made as to what parts must be used or who should perform the service. The carowner retains his full service options and can choose whoever will do the work for the least expense. I believe the carowner should have the same option for emission control repairs.

6. I am proposing to amend the performance warranty which is not currently being implemented and for that reason is not currently imploding the carowners demonstrated preference for the independents, with 80-85 percent of all garage-service work being performed by them. Moreover, more and more carowners are choosing to do the work themselves. Why should the carowner be charged the expense of a prolonged warranty which is not necessary to ensure durability and which can be invalidated so easily if he chooses to follow his established service preferences?

7. The House Small Business Committee did solicit comments and testimony from consumer groups during its 1974 hearings, but none chose to participate. The letter from the Consumer's Union, I am told, arrived long after the hearing record had closed and been printed.

The Committee bill is one attempt to address the problem associated with the performance warranty. We should note, however, that it authorizes a waiver if the automakers can demonstrate to EPA that the effectiveness of their emission control systems depends upon the use of specially designed parts installed by the specially trained mechanics of their franchised dealers. They might well be able to make a strong case.

The automakers could also be expected to seek redress through the courts. They would, no doubt, maintain that being held financially liable for the performance of a system over which they effectively had no in-use quality control would simply be unfair. I do not know how the courts would decide, but the manufacturers can be expected to forcefully argue their case.

If either a waiver or a court ruling were to permit the manufacturer to condition its warranty, the tie-in of the carowner to the automaker for these repairs would be even more pronounced.

In conclusion, I would emphasize that implementation of a 5/50 performance warranty has the potential of redirecting this nation's carowners back to their franchised dealers for the bulk of their service work, a choice most Americans are not now making. The full impact on the independent sector of the aftermarket industry cannot be predicted. Such redirection, however, can only lead to further concentration within the automobile industry as the automakers, through their franchised dealers, acquire an even larger share of the aftermarket, thereby reducing price competitiveness in this key sector. That certainly cannot be in the best interests of any carowner.

Sincerely,

LLOYD BENTSEN.

Mr. Moss. In the May 26 Record, Senator Muskie listed various allegations concerning the Clean Air Act Amendments and then gave his version of the facts involved. I believe his listing of the facts to be inadequate. For this purpose I will list each allegation he mentioned, then quote his version of the facts, and then give my own reactions to his analysis. I hope that this exercise will further clarify some of the important issues involved with the decision of whether the Senate should opt for the Public Works Committees' version of nondegradation:

#### ALLEGATION NO. 1

Legislative hearings have not been held on this provision.

#### FACTS AS SEEN BY SENATOR MUSKIE

Since enactment of the 1970 clean air amendments, the Subcommittee on Environmental Pollution has held 56 days of hearings to review implications of that act. Specific hearings on nondegradation were held in 1973, 1974, and 1975. In 1975, 14 days of hearings were held and 48 markup sessions were conducted. One entire day of hearings was focused completely on nondegradation in 1975, and

the subject was discussed in numerous other hearings that year. Legislative proposals submitted to and considered by the committee included President Ford's proposal, the Environmental Protection Agency's existing regulations, and legislative proposals from the following organizations: The American Paper Institute, the American Mining Congress, Dupont, the National Association of Manufacturers, Shell Oil, Utah Power & Light, Cast Metals Federation, Chamber of Commerce, National Association of Counties, the Electric Utility Industry, Continental Oil Co., the Sierra Club, and the State of New Mexico. The hearings were a combination of oversight and legislative hearings.

#### REACTION BY SENATOR MOSS

Legislative hearings, however, have *not* been held on the language in Section 6 of S. 3219. The nondeterioration provision was drafted and revised during Subcommittee and Committee markups, after the hearings were completed and the final version bears little resemblance to any proposal on which testimony was received.

#### ALLEGATION NO. 2

States have not been involved adequately in developing these amendments.

#### FACTS AS SEEN BY SENATOR MUSKIE

Twenty States joined the Sierra Club or submitted independent suits requesting the courts to require a nondegradation policy. These States joined the initial Sierra Club suit: Alabama, Connecticut, Florida, Kansas, Louisiana, Maine, Massachusetts, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, South Dakota, Vermont, Texas. These States filed independent suits requesting the courts to require a nondegradation policy: Illinois, New York, Texas, California, Michigan, and Minnesota—Minnesota adopted the Michigan brief. Only three States opposed the suits requesting the courts to require a nondegradation policy: Utah, Arizona, and Virginia.

In addition to joining suits, the following States have expressed support over the past several years for a policy of prevention of significant deterioration: Alaska, Colorado, Georgia, Hawaii, Idaho, Indiana, Kentucky, Maryland, Montana, Nevada, New Jersey, North Dakota, West Virginia, Wisconsin, and Wyoming.

Eight States testified in 1975, during the clean air hearings: New Mexico, Nebraska, Texas, Colorado, New York, California, Montana, and West Virginia. All submitted comments on nondegradation. Three meetings were held between the committee staff and State air pollution control officials representing the Members of the Governor's Conference. In addition, 12 meetings were held between individual State officials and committee staff members.

It was on the basis of the suggestions made in such meetings and statements from these witnesses that caused the Committee to make substantial changes in the legislative proposals regarding nondegradation.

On May 12, the Chairman of the National Governor's Conference, Gov. Robert D. Ray of Iowa, sent a telegram opposing the delay of congressional action on this issue and said this:

"I would like to advise that the policy of the National Governor's Conference (NGC) call for a decision for Congress to allow each State maximum flexibility to incorporate local guidance in its decisionmaking. An amendment to be offered by Senator Moss to S. 3219 would put off Congressional action on this action.

"Many States are concerned that the passage of such an amendment would result in continuing litigation over present court-ordered Federal regulations and bring about uncertainties among the States and other interested parties in planning for overall development in clean air areas. Therefore, I urge you and your colleagues to insure that the vital issue of prevention of significant deterioration is settled now by Congress."

#### REACTION BY SENATOR MOSS

The "facts" given in no way refute the "allegation" that States have not been involved adequately in developing the amendments. Knowledge that certain States joined in a lawsuit, that certain States in the past expressed support for a non-deterioration policy, that a few States testified at oversight hearings, and that some State representatives met with committee staff does not in any respect

indicate that a majority of States favor Section 6 of S. 3219. Even the quotation from the Chairman of the National Governors Conference does not appear to support the idea of Federal constraints on State and local decisionmaking. The Southern Governor's Conference, by resolution, urged Congress to "clarify the rights and responsibilities of the States to administer air quality programs within the States in whatever manner they choose to meet the national (ambient air quality) standards." Also, it is noteworthy that the State and Territorial Air Pollution Program Administrators—the very people most knowledgeable about, and most directly involved in, state air quality programs—adopted a resolution against Federal involvement in State determinations of the significance of deterioration.

At least 17 Governors have recently written letters expressing opposition to Congressional enactment of nondegradation as national policy.

#### ALLEGATION NO. 3

No studies have been done. A further 1-year study is necessary to have adequate information upon which to base a decision.

#### FACTS AS SEEN BY SENATOR MUSKIE

This is totally untrue. Ongoing studies of implementation should be conducted, but extensive studies already exist analyzing nondegradation policy and options.

The Environmental Protection Agency has spent approximately \$1 million in studies on nondegradation policies. This is one of the most extensive and expensive series of studies which has been conducted on environmental regulations. Prior to promulgation of the final EPA regulations on December 5, 1975, EPA compiled the following studies:

First. Technical Support Document—EPA Regulations for Preventing the Significant Deterioration of Air Quality, Environmental Protection Agency, January 1975.

Second. "Sierra Club et al. Litigation—Significant Deterioration," B. J. Steigerwald, September 27, 1972.

Third. "Summary of Responses Received Regarding the Prevention of Significant Deterioration."

Fourth. "Summary of Responses Received Regarding the August 27, 1974, Proposal To Prevent Significant Deterioration of Air Quality."

Fifth. "Summary of State Responses on 'Significant Deterioration' Proposal."

Sixth. "The Impact of Proposed Nondegradation Regulations on Economic Growth," volumes 1 and 2, Harbridge House, Inc., November 1973.

Seventh. "Implications of Nondegradation Policies on Clean Air Regions: A Case Study of the Dallas-Ft. Worth AQCR (215)," U.S. Department of Commerce, May 1974.

Eighth. "Analysis of the U.S. EPA's Proposals to Prevent Significant Deterioration Relative to the Development Outlook for New York State," New York State Department of Environmental Conservation, October 1973.

Ninth. "Impact of the Proposed Nondegradation Alternatives on New Power Plants," TRW, Inc., September 28, 1973.

Tenth. "Economic Growth and Development Impacts of Proposals to Prevent Significant Deterioration of Air Quality."

Eleventh. "Scientific Factors Bearing on Regulatory Policies to Assure Nondegradation of Air Quality."

Twelfth. "Availability of Air Quality Data in Areas Generally Below the NAAQS."

Thirteenth. "Technical Data in Support of Significant Deterioration Issue."

Fourteenth. "Nondegradation and Power Plant Size," J. A. Tikvart, August 12, 1974.

Fifteenth. "Significant Deterioration in Zone I Areas and the Relative Location of Power Plants," J. S. Tikvart, October 15, 1974.

Sixteenth. "Discussion Paper on the Magnitude of the Class II Increment in the Significant Deterioration Regulations."

Seventeenth. "Emissions of Sources Subject to Significant Deterioration Issue."

Eighteenth. "Guidelines for Air Quality Maintenance Planning and Analysis, Volume 10: Reviewing New Stationary Sources," EPA, September 1974.

Nineteenth. "Guidelines for Air Quality Maintenance Planning and Analysis, Volume 12: Applying Atmospheric Simulation Models to Air Quality Maintenance Areas," EPA, September 1974.

Twentieth. "Findings of Task Force on Significant Deterioration," R. G. Rhoads, December 20, 1973.

Twenty-first. "The Largest Annual Average, Maximum 24-Hour and Minimum 3-Hour Concentrations of Sulfur Dioxide Produced Per Year by a Modern 1,000-MW Electric Power Plant Meeting the New Source Performance Standards for Sulphur Dioxide Emissions," Enviroplan, Inc., 1974.

In addition, the Environmental Protection Agency received over 3,000 pages of testimony at the hearings held on its proposed regulations. Ninety-one comments were received from industry.

The following studies have been conducted on various Senate committee proposals:

First. "An Analysis of the Impact on the Electric Utility Industry of the Alternative Approaches to Significant Deterioration", EPA/FEA, October 1975;

Second. Chamber of Commerce Analysis and Discussion Papers;

Third. Analysis of the Impact of the Senate Proposals on the State of Alaska;

Fourth. "A Preliminary Analysis of the Economic Impact on the Electric Utility Industry of Alternative Approaches to Significant Deterioration", EPA, February 5, 1976;

Fifth. "Impact of Significant Deterioration Proposals on the Siting of Power Plants" by Environmental Research and Technology, Inc., February 18, 1976;

Sixth. "Impact Analysis of the Effective Proposed Clean Air Act Amendments and Existing EPA Significant Deterioration Regulations on Electric Utilities in Minnesota and Wisconsin" by David Hoffman, James Bechthol, November 14, 1975;

Seventh. "Technical Studies for Assessing the Impact of Significant Deterioration Regulations" EPA, May, 1976.

Eighth. "Summary of EPA Analysis of the Regional Consumer Impact of the Clean Air Act on Significant Deterioration", EPA, May 3, 1976;

Ninth. "A Preliminary Critique of FEA's Analysis of the Impact of Significant Deterioration on Oil Consumption", May 3, 1976;

Tenth. "Estimated Cost for the Electric Utility Industry of Non-significant Deterioration Amendments Currently Considered by the United States", NERA, April 16, 1976;

Eleventh. American Petroleum Institute Report, by John J. Anderson, April 16, 1975;

Twelfth. "Summary of EPA Analysis of the Impact of the Senate Significant Deterioration Proposal". April 28, 1976;

Thirteenth. "Proposed Clean Air Amendments: Implications of Proposed Rules for Nondeterioration of Air Quality on the Construction of Kraft, Pulp and Paper Mills", Environmental Research and Technology, Inc., for the American Paper Institute, September 9, 1975;

Fourteenth. "Proposed Clean Air Amendments: Implications of Nondeterioration Rules on Maine", Environmental Research and Technology, Inc., for the American Paper Institute, August 28, 1975;

Fifteenth. "The Effect of Proposed Nondeterioration Rules on the State of Maine," Environmental Research and Technology, Inc., for the American Paper Institute, October 30, 1975;

Sixteenth. "A Summary of the Background Levels of Air Quality Parameters for the Oil Shale Tracks in Colorado and Utah from September 1974 through February, 1975", American Petroleum Institute, July 14, 1975;

Seventeenth. "Power Plant Impacts on National Recreation Resources", Department of the Interior, March, 1976;

Eighteenth. "An Air Quality Evaluation for the Intermountain Power Project," Westinghouse Electric Cooperation Environmental Systems, October 16, 1975;

Nineteenth. "Health Basis for Preventing Significant Deterioration: An Ounce of Prevention," December 3, 1975;

Twentieth. "Benefits From Preventing Significant Deterioration of Air Quality," April 14, 1976;

Twenty-First. "Impact of Proposed Nonsignificant Deterioration Provision", Draft Interim Report, Inter-City Fund, Inc., April 14, 1976;

Twenty-second. "Impact of Significant Deterioration Proposals Upon Western Surface Coal Mining Operations," Environmental Research and Technology, Inc., for the Federal Energy Administration, May 5, 1976;

Twenty-third. "An Evaluation of Additional Production Costs for Significant Deterioration and Best Available Control Technology Proposals", General Electric Company, April 26, 1976.

All of these studies have highlighted the fact that the conclusions reached depend very heavily on the assumption used in conducting the study. Many studies by industry contained untrue allegations that large portions of the country would be blocked from further development. These studies were inaccurate because their initial assumptions were flawed.

Proposals to delay any nondegradation policy while further studies are conducted are merely a smokescreen for the desire to have no such policy at all.

#### REACTION BY SENATOR MOSS

It is questionable to identify some of the listed internal EPA documents as "studies", and it is misleading to suggest that all or a majority of the cited documents were in any way related to Section 6 of S. 3219 and that they substantiate its adoption as sound national policy. Although many of the listed reports are not generally available, it is known that results of some point out serious potential adverse impacts. The latest study on this issue, a study of the effect of non-degradation on the non-ferrous metal industries published in May by the Department of Commerce concluded "The proposal to establish mandatory Class I areas may result in dislocations for copper and lead smelters and new smelters may shift to foreign locations. If non-degradation proposals are enacted, construction of new copper and lead smelters on domestic sites would probably be substantially constrained."

The allegation of flawed assumptions also has been made about EPA reports. Opposition to comprehensive study before adoption of a nondeterioration requirement, particularly a study to weigh costs and benefits, might be based on fear of the conclusions that would be reached.

#### ALLEGATION NO. 4

EPA's basis for requiring pollution clean up has been challenged and EPA staff has been charged with deliberately distorting data regarding the effects of pollution.

#### FACTS AS SEEN BY SENATOR MUSKIE

These charges have effectively been laid to rest. Hearings held Friday, April 9 by the House Interstate and Foreign Commerce and the House Science and Technology Committee established the following:

First, Current national ambient air quality standards were established prior to the initiation of the study in controversy—the Community Health and Environment Surveillance System Study—CHESS. Even if the CHESS studies were discarded, this would not affect any of the national standards or EPA's implementation policies, all of which are based on a number of studies, of which CHESS is only one.

Second, The CHESS studies, however, should not be discarded: though no study is perfect—and epidemiological studies are particularly difficult to conduct—the CHESS studies have been characterized as the best of their kind in the world and the most reliable epidemiological studies ever carried out.

On April 13, on page S. 5656 the Congressional Record, the statement of Russell Train, the Administrator of the Environmental Protection Agency, is printed. This statement explains the Agency's analysis of the controversy surrounding the allegation of distortion. I recommend that statement to those who would like to gain some perspective on this whole controversy. Disagreement among scientists always occurs; to equate this with deliberate fabrication and distortion is to misunderstand the nature of such comments from scientists.

#### REACTION BY SENATOR MOSS

Anyone who thinks the charges have been "laid to rest" should review pages H. 3884-88 of the May 4, 1976, Congressional Record: investigation of the allegations is continuing. There is ample evidence that certain of EPA's control strategies and policies rest heavily on the challenged CHESS conclusions.

#### ALLEGATION NO. 5

Costs of construction delays as a result of the Senate nondegradation policy may be extensive; therefore, no such policy should be adopted.

## FACTS AS SEEN BY SENATOR MUSKIE

Greater uncertainty will occur by eliminating the Senate provision than by accepting it and establishing congressional policy in this area. If Congress remains silent on this subject now, that will only aggravate uncertainty, not erase it.

The policy contained in the Senate Committee bill will clarify policy and reduce uncertainty. Sources may then apply for the right to construct new facilities knowing the ground rules. At present no such certainty can occur.

Moreover, present EPA regulations are subject to court challenge. If the Sierra Club wins, then EPA will be required to tighten its requirements. Even if EPA is sustained, it still could revise its regulations to make them more stringent. On the other hand, by prescribing the requirements in the bill, EPA's authority to promulgate more restrictive rules is curtailed.

## REACTIONS BY SENATOR MOSS

Court challenges to the EPA regulations, in part, raise constitutional issues, which would not be rendered moot by Congressional action. No stay of enforcement of EPA's rules was requested or granted and, until they are upheld or overturned, there is no reason why they cannot and should not be applicable to sources applying for construction permits. Any regulations are, of course, subject to court challenge. Rather poor logic is followed in stating only that EPA rules could be made more stringent unless the bill is passed; they also could be made less stringent, if experience with their administration so indicates, but such action would be precluded if requirements are written into law.

## ALLEGATION NO. 6

A no-growth buffer zone of 60-100 miles will be required to prevent pollution of the Federal parks.

## FACTS AS SEEN BY SENATOR MUSKIE

This is totally false. Under the Senate bill (but not the EPA regulations), the Class I increment which protects such areas is used as an initial, not a final, test. An appeal is allowed which would permit construction of a major facility regardless of the test for a Class I area if the applicant can demonstrate no adverse impact on the air quality values of the Class I area.

In addition, according to joint EPA-FEA calculations, a well-controlled 1,000 megawatt coal-fired powerplant could locate as close as 6 miles from a Class I area without causing that area's increment to be exceeded.

## REACTION BY SENATOR MOSS

These "facts" are oversimplified and misleading. First of all, it was EPA that pointed out (39 F.R. 42510) the necessity for large buffer zones (60-100 miles) to prevent degradation of class I areas. A plant locating as close as 6 miles to a class I area would have to be in flat terrain, have a tall stack (although EPA's policy limits stack heights), probably burn low-sulfur coal, and be equipped with a scrubber (with assumed 100% reliability). An applicant must demonstrate "to the satisfaction of the Federal Land Manager" that emissions will have no adverse impact on the "air quality related values" (whatever that term may be interpreted to mean) of Federal lands in class I areas. It can be presumed that certification to that effect by a Federal Land Manager will be virtually impossible to obtain, since under the bill he has an "affirmative responsibility" to protect the air quality related values of lands under his jurisdiction, and the Committee Report (page 27) admonishes him to "assume an aggressive role" and to "err on the side of protecting the air quality-related values". Even if concurrence is given, with that legislative history, it is certain that delay, uncertainty and litigation will be encountered.

## ALLEGATION NO. 7

At least 80 percent of many States would be off-limits to new development.

## FACTS AS SEEN BY SENATOR MUSKIE

One percent of the Nation's land would be directly placed in a Class I category, which is designed to protect these important national resources: all inter-

national parks, and each national park, memorial park, and wilderness area over 5,000 acres.

#### REACTION BY SENATOR MOSS

The "facts" do not refute the "allegation", since the former relate to the minimum class I designations nationwide and the latter refers to the Federal lands in individual States.

#### ALLEGATION NO. 8

Amendments not only ban new manufacturing plants, but even new housing, farming operations, and recreation.

#### FACTS AS SEEN BY SENATOR MUSKIE

This is false. The provisions only apply to "major emitting facilities" which emit over 100 tons of the pollutant per year and which are listed as a major emitting source category in the bill.

#### REACTION BY SENATOR MOSS

This is not the total "fact", since other facilities "as the Administrator determines" could be added to those listed in the bill.

#### ALLEGATION NO. 9

The increments (of allowable degradation of air) are often found to be violated by natural emissions which occur in rural and scenic areas. Therefore, further development already is taken up by nature in many areas.

#### FACTS AS SEEN BY SENATOR MUSKIE

The increments are in addition to any existing baseline air quality. Such a baseline includes natural emissions and existing manmade sources. The increment is an allowable quota which is added to the existing air quality. Nature cannot use it up. The secondary standards, including natural pollution, establish the limits on growth. No one supports violating secondary standards.

#### REACTION BY SENATOR MOSS

While nature cannot use up the allowable increment, as defined, natural emissions well may prevent use of the full increment and preclude construction in many areas.

#### ALLEGATION NO. 10

Most Federal lands would be Class I, effectively ruling out most land in some States.

#### FACTS AS SEEN BY SENATOR MUSKIE

This is false. Under the Senate bill, only existing national parks and national wilderness areas over 5,000 acres could be Class I. All other Federal lands, including national forests, Indian lands and monuments could only be redesignated as Class I with State concurrence.

#### REACTION BY SENATOR MOSS

This "fact" is only partly accurate. New national parks and national wilderness areas, regardless of size, initially would be class I and could be redesignated class II only with agreement of the Federal Land Manager (who is charged with assuming an "aggressive role in protecting the air quality values of lands under his jurisdiction"). Wilderness areas in 1975 amounted to 12.7 million acres, pending Administration proposals would raise this to 40 million acres, and 35.5 million more acres is slated for review; at a generous estimate, over 200 million acres of land is still suitable for wilderness designation. (CEQ's 6th Annual Report, December, 1975, page 251-5). The potential impact of class I Federal lands is enormous!

#### ALLEGATION NO. 11

The number of mandatory Class I areas will increase as new national parks and national wilderness areas are created.

## FACTS AS SEEN BY SENATOR MUSKIE

This is not true. The mandatory Class I designation only applies to national parks and national wilderness areas over 5,000 acres which are in existence on date of enactment.

## REACTION BY SENATOR MOSS

This "fact" is false. New national parks and national wilderness areas, regardless of size, are mandated class I initially, and the State can change the designation to class II only with the Federal Land Manager's agreement (Section 110(g) (1) (A) (ii) of the Act, as it would be amended).

## ALLEGATION NO. 12

The prevention of significant deterioration provisions is a Federal land use policy based solely on one criterion—air quality.

## FACTS AS SEEN BY SENATOR MUSKIE

The Senate bill does not require any land classification scheme to be undertaken by the State. The bill in question only regulates air quality and emissions, not land use. The States are free to use the land as they see fit.

Of course, air quality is not the only, let alone the decisive, factor in influencing a State's growth decision. It is merely one factor to be considered.

## REACTION BY SENATOR MOSS

Regardless of the attempt at semantic obfuscation, there is no denying that the bill would regulate certain land use decisions (location of new major sources) on the basis of the air quality criterion alone, and States are not free to use land as they may see fit. If a State makes growth and development decisions which conflict with the air quality policy in the bill, new sources simply would not be permitted—no matter how socially and economically desirable, nor how much they are favored by citizens of the area.

## ALLEGATION NO. 13

The nondegradation policy would have a much more severe impact in some States than in others.

## FACTS AS SEEN BY SENATOR MUSKIE

This allegation comes from a misunderstanding of the use of air quality increments proposed in the committee bill.

Even without a nondegradation policy, an air quality increment already exists in clean air areas. The increment is the amount of pollution which could be added to the area until the ambient air quality standards are reached. In areas of flat terrain, that increment is large. In areas of severe terrain, that increment—up to the national ambient air quality standards—is smaller because pollution concentrations build up rapidly against mountainsides. Therefore, States with flat terrain have a greater competitive advantage if no nondegradation policy exists.

Under nondegradation policy, this uneven competitive disadvantage would be diminished. The amount of additional pollution allowed in all areas will be the same. Areas of uneven terrain are frequently constrained by the national primary and secondary ambient air quality standards. The terrain effects would provide constraints with or without a nondegradation policy. In such cases, the nondegradation requirement for the use of best available control technology will enable such areas to control pollution and allow further growth.

## REACTION BY SENATOR MOSS

This "fact" contains convoluted reasoning designated to justify the non-deterioration policy. Certainly, under present law, there is an allowable increment between existing air quality and the national ambient standards; but reducing the allowable increment in all areas by an arbitrary number would in no measure diminish competitive advantages that exist in certain areas because of natural terrain features. It merely makes it more difficult and costly to locate new sources anywhere, because the allowable increment would be subjectively reduced.

## ALLEGATION NO. 14

Western States will be held at their present levels of development and not be allowed to develop their energy resources. The Nation will be asked to curtail its industrial output.

## FACTS AS SEEN BY SENATOR MUSKIE

These allegations are false. They echo the erroneous position of the Chamber of Commerce since the summer of 1975—a line which has not been altered even though it has been fully discredited. In responding to the Chamber's allegation, Roger Strelow, Assistant Administrator of the Environmental Protection Agency said:

"I have just read your article in September's Washington Report. . . . The article claims that the Environmental Protection Agency's regulations for the Prevention of Significant Deterioration of Air Quality would endanger States' development and 'ban development in areas 60 to 100 miles adjacent to select Federally owned lands such as national parks and forests.' This is simply not true.

"First, the regulations do not apply to all development, but only a select number of the major stationary industrial sources. Thus, contrary to what the article concludes, activities such as construction, farming, light manufacturing, and residential development are not affected by the regulations.

"I would like to comment on the article's contention that Congress in amending the Clean Air Act, is considering a 'no growth federal land use policy' based solely on air quality. That is nonsense. In response to the Administration's request to consider all alternatives and to give explicit guidance on a prevention of significant deterioration policy that allows a balancing of environmental, economic and energy objectives, the Congressional Subcommittees have provided proposals that give the States the authority to make their own determinations of what constitutes significant deterioration within a framework of allowable air quality levels. Like EPA's regulations, these proposals require the States to consider and balance their various objectives, with full public participation. The proposals apply only to major industrial sources.

"The public wants to preserve clean air. According to an August 1975 poll commissioned by the Federal Energy Administration 94 percent of the American people favor preserving our clean air regions."

The EPA analysis of energy facilities indicates that coal gasification, oil shale, coal-fired powerplants and other such energy facilities can meet the nondegradation requirements.

In the Congressional Record on April 29, 1976, on page S6175, a new EPA study is printed showing that all major industries could build under the Senate committee's nondegradation proposal. These include powerplants, papermills, smelters, refineries, and so forth.

In sum, Western States will not be precluded from development, and the Nation will not be asked to curtail its output. It will be asked to insure that its growth is clean and that analysis of future development occurs in a rational policy rather than on the basis of piecemeal, private, decisionmaking.

## REACTION BY SENATOR MOSS

Opinions of an EPA Assistant Administrator are not necessarily "fact", and many of the EPA's reports and statements have been subject to serious challenges. A copy of the Chamber of Commerce reply to Mr. Strelow's quoted letter is attached. The EPA study which appeared in the April 29, 1976, Congressional Record clearly does not support the Senate nondeterioration proposal; it shows (1) large buffer zones will be necessary in many areas, (2) class III areas will be required if growth and development are not to be impaired, (3) only small, inefficient, uneconomical, and widely separated facilities can be built in hilly terrain, and (4) EPA questions the value of requiring use of best available control technology rather than the present new source of performance standards.

## ALLEGATION NO. 15

There will be a loss of employment due to the nondegradation provisions.

## FACTS AS SEEN BY SENATOR MUSKIE

This is incorrect. In addition to the fact that this provision only applies to new facilities—to employment not yet developed—the pollution control requirements

imposed in the committee bill will increase employment, not reduce it. In an immediate sense, more jobs will be needed in order to construct the pollution control facilities associated with compliance—facilities which might not have been installed without these amendments. In an economy with high unemployment, this is a plus.

Studies of the Council on Environmental Quality and Chase Econometrics shows the economic effects of pollution control. These requirements have led us to the creation of one million new jobs, according to CEQ.

#### REACTION BY SENATOR MOSS

This "fact" is a glib assumption. The real fact is that nobody knows the potential impact on employment, but the Department of Labor has expressed concern (Congressional Record, April 1, 1976, page S. 4805) as have some labor union officials.

#### ALLEGATION NO. 16

We do not know which areas of the Nation are clean enough to qualify for coverage under the nondegradation provision and, therefore, must wait for further information before determining that such areas should be protected from significant deterioration.

#### FACTS AS SEEN BY SENATOR MUSKIE

This criticism misses an important difference between nondegradation areas and dirty areas; it implies that expansion in nondegradation areas will somehow be more restricted than expansion in areas which have exceeded national ambient air standards.

This is untrue. In fact, expansion in dirty areas is more difficult. The health and welfare standards have already been exceeded in such areas, and a substantial burden rests on any applicant for a new source to demonstrate that he will not worsen that situation or interfere with cleaning up to the national standards; such a source must make the case that any pollution should be allowed.

Absolute knowledge does not exist. There are many gaps in data on monitoring of existing air quality. But this does not provide a reason for delaying a policy to protecting existing air quality. Most States will be able to make intelligent judgments of air quality in areas where little monitoring data exists. As new applications are submitted, information will be gathered as part of the permit approval process.

#### REACTION BY SENATOR MOSS

This "allegation" is not particularly pertinent, and the "facts" do not speak to the allegation in an enlightening manner. It is well known that expansion will be difficult or impossible in urban areas where ambient standards are exceeded and most citizens are exposed; that is exactly why any policy that would restrict development in other areas, where few people would be exposed, should be carefully evaluated beforehand.

#### ALLEGATION NO. 17

Technology does not exist to model the projected emissions from new sources or for monitoring the emissions from these sources. Therefore, Congress, should not act until precise tools exist.

#### FACTS AS SEEN BY SENATOR MUSKIE

This criticism has a "Catch-22" approach. It says that sources should be allowed to pollute because science has not developed precise techniques for telling exactly how much pollution is created; by the time such techniques are developed, they could very well be useless in protecting air quality, since deterioration would have made the question moot.

For years State air pollution control agencies and Federal agencies have used modeling projections to analyze applications for new sources that would continue under the non-degradation proposal. There is no other way of determining the impact of a source that has yet to be constructed.

In most cases, the errors identified show that more pollution is occurring not less. This indicates a need to control such pollution now.

## REACTION BY SENATOR MOSS

Although limitations and imprecision of monitoring and diffusion modeling are well documented, this "allegation" never has been advanced by those proposing further study of the nondeterioration provision.

## ALLEGATION NO. 18

High quality air in clean areas is a luxury—a luxury that must be sacrificed in order to allow industry to grow.

## FACTS AS SEEN BY SENATOR MUSKIE

Clean air is not a luxury and growth need not be sacrificed to keep it. If we attempt to sacrifice air quality now for short-term gains, we will find our water becoming more acid, our crop production deteriorating, our esthetic experience in wilderness areas declining, and our health being damaged by long-term low-level exposure.

In addition, we will find that we have lost one of the most useful, growth-preserving options available—the option of determining how air resources will be used prior to their use. Without a nondegradation policy, new sources may well adopt lesser control of technologies and thereby use up the available air quality without providing room for the growth of industries that follow in subsequent years.

## REACTION BY SENATOR MOSS

Both the "allegation" and "fact" are specious. Nobody is advocating sacrifice of clean air. Speculation about unknown adverse effects is not in accord with scientific facts. Recent scientific reviews have substantiated the ambient air quality standards which protect health and welfare with adequate margins of safety.

## ALLEGATION NO. 19

A nondegradation policy will harm the poor and those on fixed incomes.

## FACTS AS SEEN BY SENATOR MUSKIE

This is erroneous. Those who use this argument cite competing and mutually exclusive arguments. On the one hand, nondegradation allegedly hurts the city dweller because growth in the clean portion of the metropolitan areas will not be allowed and plants will therefore be forced to flee to outlying areas. On the other hand, cities argue that growth will be restricted in rural clean air areas because of the nondegradation provision and sources will be required to remain in urban areas.

Neither allegation is correct. Dirty air areas usually have some portions that continue to be clean and new sources, if carefully controlled and properly sited, can be located in such urban areas. Growth will continue and the metropolitan area will attract jobs and industry. In addition, the 1976 amendments contain new provisions to allow expansion in such areas. In rural areas, development of new facilities is clearly allowed and nondegradation requirements only insure that the growth be as clean as possible.

## REACTION BY SENATOR MOSS

Those who have studied the matter and are in the best position to know would resent the flip assertion that this allegation is "erroneous". For example, the Secretary of Health, Education, and Welfare has stated: "We conclude that the nondeterioration regulations could well impose substantial social and economic costs which in turn would likely be borne disproportionately by the poor, the aged, and the disadvantaged." (See also "No Growth Has to Mean Less is Less," by Bayard Rustin, President of the A. Philip Randolph Institute and National Chairman of Social Democrats, USA, New York Times Magazine, May 2, 1976.)

## ALLEGATION NO. 20

The 24 hour or 3 hour increments are unnecessary and should be dropped. The annual average increment levels are sufficient.

## FACTS AS SEEN BY SENATOR MUSKIE

Eliminating the short term—3 hour and 24 hour—increments from the bill would completely undermine the protection provided by the nondegradation policy.

An annual average is the sum of a year's daily pollution readings. Since they are only averages, they can mask high air pollution concentrations. In response to a letter I wrote on this subject, Russell Train, Administrator of the Environmental Protection Agency, has said:

"The short-term increments are generally controlling for sources with elevated emission points (e.g., power plants) . . . For example, it is entirely possible that a new power plant could meet the annual Class II increment for both sulfur dioxide (SO<sub>2</sub>) and particulate matter (TSP) yet cause short-term concentrations that would approach the short-term national ambient air quality standards (NAAQS).

"Thirty-three existing plants were analyzed. . . . Clearly, sole application of the annual increment would not, in many cases, provided a significant margin of nondeterioration protection beyond the primary and secondary NAAQS if a source could create short-term concentrations up to the 24-hour or 3-hour national standards.

"In addition, . . . allowing degradation up to the three-hour secondary NAAQS, could possibly result in damage to certain commercial crops.

" . . . the 24-hour concentration of particulates has a considerable impact on visibility. For example, degradation up to the 24-hour NAAQS would reduce visibility from more than 70 miles to about 5 miles. Sole use of the annual increment for nondeterioration would in many cases, allow such a reduction in visibility to occur."

## REACTION BY SENATOR MOSS

"That chronic low levels of pollution or short-term peaks below the Federal standards may harm health or welfare is speculative and unfounded. If and when supporting evidence becomes available, the law mandates that ambient standards be changed. An annual average is not the sum of a year's readings, but is the mean (geometric or arithmetic, as specified in the standards). While an annual average may (and probably will) contain some relatively high concentrations, nothing in the present Act permits levels above the three- and 24-hour standards more than once a year. "Deterioration" is a long-term reduction in air quality and is not determined by transitory short-term excursions; the annual average, then, is the best and truest measure of "deterioration" and the three- and 24-hour standards are relevant only to health and welfare protection.

## ALLEGATION NO. 21

EPA will have the final control over which sources may get permits to construct.

## FACTS AS SEEN BY SENATOR MUSKIE

This is true under present EPA regulations but not true under the Senate bill. The States are responsible for deciding whether to issue permits to new sources under the Senate bill. No State permit may be disapproved if the procedures are followed and if the ceilings and increments set in the bill are observed.

## REACTION BY SENATOR MOSS

It is wrong to imply that the Federal presence will not pervade the nondeterioration policy. EPA and Federal Land Managers are provided ample clout to influence or block the issuance of permits.

## PAPERMILLS AND CLEAN AIR

June 16, 1976

Mr. MUSKIE. The Senate has heard much debate on the issue of protection of clean air areas through the significant deterioration provision in the pending amendments to the Clean Air Act.

Much controversy has been generated regarding the extent to which new industrial facilities can be built in clean areas, the possible sizes of such installations, and the cost of their construction. The Environmental Protection Agency has just completed a report which provides answers to these questions for the paper industry. This analysis supports the fact that there is no basis for charges that S. 3219 would foreclose economic development in major portions of the country, or in any specific case, despite the grave concerns expressed by the kraft pulp and paper industry.

The EPA study is based on an analysis of new mills and expansions at sites selected as optimal by the industry in the absence of nonsignificant deterioration requirements.

I ask that the entire study be printed in the Record.

I recommended EPA's findings to my colleagues as yet another example of the complementary nature of prevention of significant deterioration and future industrial expansion. I reiterate that S. 3219 is designated not to halt development but rather to protect our air resources for the use of future generations.

#### PREFACE

The following is one of a series of technical reports prepared by EPA concerning the impact of alternative proposals to prevent significant deterioration of air quality on major industrial and energy air pollution sources. The purpose of these analyses is to assist Congress in its consideration of alternative approaches to achieving the goal of protecting and enhancing "the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity and cost impacts of its population."<sup>1</sup> This report discusses EPA's analysis of the capacity of the Congressional proposals on the kraft pulp and paper industry.<sup>2</sup>

The kraft pulp and paper industry has expressed concern over the impact of Senate and House proposed amendments to the Clean Air Act and of EPA's current regulatory approach to the prevention of significant deterioration (described in Appendix A) because of the location of kraft mills in fairly hilly terrain and the possible proximity of kraft mills to Class I areas. An analysis was made, therefore, using actual topography and location of a sample of mills selected as representative of sites meeting the industry's needs in the absence of a program to prevent significant deterioration of air quality. A determination was made of capacity affected and cost impacts under a number of control technology and fuel use assumptions.

#### EPA ANALYSIS OF THE IMPACT OF ALTERNATIVE NON-SIGNIFICANT DETERIORATION PROPOSALS ON THE KRAFT PULP AND PAPER INDUSTRY

##### 1.0 Summary and conclusions

This report is an analysis of the impact of alternative non-significant deterioration proposals on future kraft industry expansion. Actual data on specific sites for new mills and capacity expansions at existing sites under investigation by the major pulp and paper manufacturers are closely guarded and have not been made public beyond 1978. In the absence of this information, historical and projected data through 1978 were used under the premise that non-significant deterioration proposals were in effect at the time the identified kraft pulp capacity was proposed for construction. Thus the mill sites identified reflect sites selected as optimal by the industry in the absence of non-significant deterioration requirements. New mills and capacity expansions from 1971-1978 were analyzed. For these mills sites, three capacity scenarios were examined:

Actual new mill and expansion capacities 1971-1978;

<sup>1</sup> Clean Air Act as amended, 1970.

<sup>2</sup> S. 3219 (Clean Air Act Amendments of 1976), March 29, 1976. H.R. 1049S (Clean Air Act Amendments of 1975), May 13, 1976.

Duplication of total site capacity including existing and new announced expansions;

The construction of a prototype 1000 ton per day bleached kraft mill at each of the sample sites.

In addition, the cost impact of best available technological control requirements was assessed for projected capacity from 1980 to 1990.

#### 1.1 General conclusions

House and Senate proposed amendments to prevent significant deterioration of air quality will not prevent the construction of new economically sized kraft pulp and paper mills. Rather, the Congressional proposals will require some new mills to use different air pollution control strategies such as further control of sulfur dioxide emissions, construction at an alternative site, use of taller stacks, etc.

The cost impact of non-significant deterioration proposals on the pulp and paper industry should be very small. Capital cost impacts in the 1980-1990 decade should not exceed 5% of industry baseline capital expenditures. Annual cost impacts should not exceed 4% for the capacity additions over the decade. The overall impact will be about a 1.5% increase in total annual costs for the industry nationwide in 1990.

#### 1.2 Specific conclusions

All new kraft mills and capacity expansions announced since 1971, covering the period through 1978, could have been built as planned under both the Senate and House non-significant deterioration proposed air quality increments without additional control technology or altered fuel use. In fact, all capacity announced since 1971 could have been built under the Senate and House proposals even if all plants burned coal and met Federal new source performance standards (NSPS).

Eighty-nine percent of the sample mill sites would have no difficulty in duplicating total site capacity even if the mills were forced to burn coal and just met NSPS. By examining total site capacity the analysis covered 43% of the industry's Kraft pulping capacity nationwide, including announced additions through 1978. In this manner the analysis had greater applicability. Capacity precluded at the affected sites would be minimal (less than 1%) if mills used or were required to control beyond NSPS (low sulfur oil were burned or stack gas scrubbers with local available coal). The cost of compliance nationwide under both the Senate and House proposals totaled less than one percent of total capital and annual costs in the sample mills. The cost estimate is considered to be conservative and could be reduced if alternative sites or modified design parameters were introduced into the analysis.

Eighty-seven percent of the sample mill sites would have no difficulty in supporting a prototype 1,000 ton per day bleached Kraft mill burning coal meeting the NSPS and generating all electricity on-site. Capacity precluded at the affected sites would be minimal (less than 1%) if mills were required to control beyond NSPS (low sulfur oil or stack gas scrubbers with locally available coal). The cost of compliance under both the Senate and House proposals nationwide totaled less than one percent of total capital and annual costs in the sample mills. This cost estimate is considered to be conservative and could be reduced if alternative sites or design parameters were introduced into the analysis.

If provisions requiring BACT were defined as requiring control beyond NSPS,<sup>1</sup> the House and Senate proposals would increase the industry's capital requirements up to a maximum of \$570 million in the 1980 to 1990 decade assuming all new additions burned coal and had to employ scrubbers. This is equivalent to a 5% increase in industry's capital needs. The comparable estimates for annual cost increases in 1990 were \$173 million which is equivalent to an increase of 4% for the mills built between 1980 and 1990. If BACT were defined only to require

<sup>1</sup> When BACT was assumed to require control beyond Federal NSPS under the House and Senate proposals, a mill was projected to employ a stack gas scrubber with medium sulfur coal (.32 lbs/SO million Btu). It should be noted that the use of lower sulfur coal with a scrubber would further reduce emissions. Since the Senate proposed amendments would leave the determination of BACT requirements to the States on a case-by-case basis, costs are presented as a range from controls needed just to meet NSPS and the significant deterioration increments at the low end to control beyond NSPS at the high end. The House proposal requires the Administrator of EPA to revise NSPS to reflect the best available technology considering cost, energy and other environmental impacts. While no range is presented for the House proposal, it is possible that a less restrictive definition of BACT would be determined by EPA.

compliance with current NSPS, as is possible under the Senate proposal, the cost impact would be significantly less for this period and is anticipated to be comparable to those impacts defined for the mills announced capacity additions in the 1971-78 period.

If mills are required only to meet existing NSPS, regional impacts would vary considerably in mills which would have to employ additional controls or alter fuel use in order to duplicate total site capacity and comply with proposed allowable air quality increments under the Senate and House proposals. Impacts identified in the analysis were concentrated in the northeast and mountain and Pacific regions ranging up to 10 and 16 percent of capacity potentially precluded in these regions under the Senate and 17 to 24 percent of capacity potentially precluded in these regions under the House Class I and II and if additional steps were not taken to reduce emissions. Under the House proposal, the Class III increment would eliminate almost all of these regional capacity constraints. If BACT were defined as requiring control beyond NSPS, or if all of the affected mills used low sulfur oil or scrubbers with coal, almost all of the capacity noted above could have been built in these regions. These additional controls would not impose a significant cost (less than 4% of annual costs) and should allow almost any economically, sized mill to be built. However, siting will have to be more selective in both the northeast and mountain and Pacific areas of the country. The other four economic regions had minimal to no impact attributable to the proposed Senate and House air quality increments.

## 2.0 Characteristics of sample kraft pulp and paper mills.

The most ideal sites to analyze to determine the impact of proposals to prevent significant deterioration of air quality (NSD) are the ones currently under consideration by the major corporations in the pulp and paper industry. However, future site planning is a closely guarded secret and it has not been possible to gather this information from individual firms or the American Paper Institute (API). An alternative approach which is used in this report is to analyze historical data under the hypothetical premise that NSD regulations went into effect at the time the mills were proposed for construction. Locational decisions during this period actually ignored NSD considerations and it is, therefore, possible to isolate whatever impact NSD could have had in terms of capacity precluded and additional pollution control costs.

The kraft mill sites selected for analysis cover all known expansions and new mills since 1971 including announced capacity expansion to be completed by 1978. A sample of 46 kraft mills representing 40% of all kraft mill operations was identified in this manner. (See Table 2-1.) The sample indicates that most of the capacity growth took place through expansion at existing sites. New mills represented only 9 of the mill sites and 33% of sample capacity. (See Table 2-2.) Existing mills do not have the site flexibility of new mills but are generally much smaller additions. Expansions at existing sites averaged 215 tons per day compared to 633 tons per day for new mills.

TABLE 2-1.—ANNOUNCED KRAFT MILL EXPANSIONS AND NEW MILLS, 1971-78

[Regional and size distribution of sample mills]

Region	Number of mills	Percent total	Capacity added (tons per day)	Percent total
Northeast <sup>1</sup>	8	17.4	3,025	17.7
North-central <sup>2</sup>	4	8.7	845	5.0
South Atlantic	11	23.9	3,675	21.5
East south-central	6	13.0	2,115	12.4
West south-central	12	26.1	6,362	37.3
Mountain and Pacific <sup>3</sup>	5	10.9	1,045	6.1
Total	46	100.0	17,067	100.0

<sup>1</sup> New England and Mid-atlantic.

<sup>2</sup> East and west north-central.

<sup>3</sup> U.S. census region west.

Sources: "Pulp & Paper" annual capacity surveys (1968-76). "Paper Trade Journal" annual capacity surveys (1969-74) Company annual reports (1970-75). Company news releases. API announced pulp paper and board capacity expansions 1975.

TABLE 2-2.—NEW KRAFT MILLS, (1971-78 STARTUP) IN SAMPLE <sup>1</sup>

Region	Number of mills	Capacity (tons/day)
Northeast.....	2	1,340
North-central.....	1	600
East south-central.....	2	1,150
West south-central.....	4	2,610
Total.....	9	5,700

<sup>1</sup> See table 2-1 for notes on regions and sources.

Capacity growth is expected to increase during the next 8-year period. Increases in total kraft pulping capacity of 32,390 tons per day from 1978 to 1985 as contrasted to 17,067 tons per day contained in the sample have been projected by Arthur D. Little, Inc.<sup>1</sup> Therefore, the total sample capacity studied in this report was reviewed under a number of capacity scenarios to adequately reflect future growth requirements of the kraft industry over the next decade.

#### 2.1 Alternative capacity scenarios analyzed

The limitations of using historical data to predict future activity was recognized. A different set of sites will assuredly be involved in future capacity expansions. It is not expected, however, that the pattern of future development will change markedly in the foreseeable future, i.e., the majority of additions will take place at existing sites and will be generally smaller in nature than entirely new mills. At some point, however, economies of scale or woodland constraints will limit this form of expansion for future development. Therefore, several alternative cases were explored.

As a second capacity scenario, the total capacity at each site was examined assuming that the total site capacity was new. This essentially had the effect of increasing the average site size from 371 tons per day to 974 tons per day. In addition to the nine new mills included in the sample, an examination of total site capacity at sample mills supporting expansions was also considered to be a realistic indicator of possible future kraft industry impacts as these capacities are indicative of capacities actually supportable by total woodland supplies at particular sites, although not indicative of a total national increase in capacity.

A third case was evaluated assuming that the capacity additions at each site were 1,000 tons per day. Although the average new mill size is 633 tons per day, some of the new mills under construction are as large as 1,000 tons per day. It is anticipated that new mills will be increasing in size. It was, therefore, determined that as a worst case the analysis should assess whether a prototype 1,000 tons per day bleached kraft mill could be built at the sample sites under alternative non-significant deterioration proposals. This analysis was made, however, ignoring capacity limitations imposed by woodland supply which in some cases would not support a 1000 ton per day mill.

TABLE 2-3.—TOTAL SITE CAPACITY OF SAMPLE MILLS

Region <sup>1</sup>	Number of mills <sup>2</sup>	1970 capacity (tons per day)	Total site capacity <sup>3</sup>	Percent of total
Northeast <sup>4</sup> .....	6	3,030	4,715	12.0
North-central.....	3	1,265	1,510	3.9
South Atlantic.....	11	10,030	13,705	35.0
East south-central.....	4	2,705	3,670	9.4
West south-central.....	8	6,385	10,137	25.9
Mountain and Pacific.....	5	4,335	5,380	13.8
Total at existing mills.....	37	27,750	39,117	100.0
New mills.....	9	.....	5,700	.....
Total sample capacity.....	46	.....	44,817	.....

<sup>1</sup> See table 1 for notes on regions.

<sup>2</sup> Does not include sites on which new mills will be built.

<sup>3</sup> Includes announced expansions since 1971 through 1978.

<sup>4</sup> Does not include IP's Ticonderoga, N.Y. mill which was closed when new mill came on stream in 1971 (counted as new mill).

Source: "Lockwood's Directory of the Paper & Allied Trades—1971-72." "Post's Pulp & Paper Directory, 1971."

<sup>1</sup> The Economic Impact of Environmental Regulations on Pulp and Paper Industry. (Final report to be published in September 1976.)

## 2.2 Comparison of sample and U.S. kraft industry

Tables 2-4 and 5 compare the sample capacity to total U.S. kraft pulping capacity. As can be seen in Table 2-5, considering total capacity at sample sites, the average size mill at the 46 sites in the sample is close to the national average mill size, i.e., 888 tons per day nationally compared to 956 tons per day in the sample.

Using total sample site capacity, the analysis covered 32% of national kraft pulping capacity in 1970 and 43% of national capacity through 1978. A comparison of the Regional distribution of sample site and national capacity totals as of 1970 indicates coverage of at least 17% of the mills and at least 18% of the capacity in each region of the country.

## 2.3 Fuel use in sample and kraft industry

Most of the existing mills in the sample burn oil, gas or bark in the power boilers. Only 12% of the mills burn coal: coal and/or bark (6%); or burn coal, oil and bark (6%). This breakdown is comparable to the American Paper Institute's reported statistics for the industry as a whole. A comparison and regional breakdown are presented in Tables 2-6 and 2-7.

Fuel mix can make a significant difference in emission from the mills. As can be seen in Table 2-8, a mill burning low sulfur oil or using a scrubber with coal emits only 40% of the SO emissions of a mill of comparable size burning coal just meeting New Source Performance Standards (NSPS) in the power boiler. Comparing the more typical case, a mill burning oil or oil and bark will emit only 70% of the SO emissions of a mill of comparable size burning coal just meeting New Source Performance Standards. Therefore, assumed fuel mix will have an important impact on the results of the analysis. This report includes an analysis of the impact of alternative non-significant deterioration policies assuming that the mills use what they actually are burning, and also assesses the impact of the contingency that national energy policy will dictate the increased use of coal.

In addition, as indicated in Table 2-8, the purchase of electricity from off-site sources can also reduce emissions on-site. However, because almost all of the sample mills generate electricity on-site, the "purchase" option which is an alternative means of reducing emission was not specifically analyzed.

## 3.0 Methodology

Using actual topography and location of the sample of 46 kraft mill sites, results from EPA approved air quality impact modeling were used to determine maximum allowable kraft pulping capacity at each of the sites under alternative non-significant deterioration proposals.

TABLE 2-4.—COMPARISON OF SAMPLE MILLS TO TOTAL U.S. KRAFT MILLS (1970)

Region	Total United States, 1970		Sample, 1970		Sample percent of region	
	Mills	Capacity (tpd)	Mills	Capacity (tpd)	Mills	Capacity (tpd)
Northeast.....	8	3,978	6	3,030	75.0	76.2
North-central.....	18	2,798	3	1,265	16.7	45.2
South Atlantic.....	28	34,725	11	10,030	39.3	28.9
East south-central.....	21	14,772	4	2,705	19.0	18.3
West south-central.....	23	16,107	8	6,385	34.8	39.6
Mountain and Pacific.....	22	14,256	5	4,335	22.7	30.4
Total.....	120	86,635	37	27,750	30.8	32.0

<sup>1</sup> See table 1 for notes on region.

Sources: API Capacity Survey 1970-73, table III.

Table 2-5

	Tons/day
Average kraft mill size (US) <sup>1</sup> .....	888
Average kraft mill size in sample <sup>1</sup> .....	956
Average capacity expansion (1971-1978).....	215
Average new mill capacity since 1971 through 1978.....	633

<sup>1</sup> These capacity data include capacity existing in 1970 plus expansions both incremental and new mills since 1971 and projected through 1978.

TABLE 2-6.—KRAFT MILL FUEL USE IN UNITED STATES, 1972<sup>1</sup>

Region	Fuel use (percentages)					Other
	Natural gas	Oil	Coal	Purchase of electricity	Process wastes	
Northeast.....	5.5	56.1	13.6	7.3	14.6	2.9
South.....	20.6	20.2	6.9	2.8	47.9	1.6
North-central.....	33.8	8.8	40.7	6.1	9.6	1.0
Mountain and Pacific/Alaska.....	22.9	13.3	-----	9.8	40.6	13.4
Total, United States.....	20.9	22.0	11.7	4.8	37.1	3.5

<sup>1</sup> American Paper Institute: "Patterns of Fuel and Energy Consumption," March 1974.

TABLE 2-7.—KRAFT MILL FUEL USE IN SAMPLE, 1975

[Use in new mills startup after 1975, as reported to date]

	Number of mills						No information
	Total in sample	Natural gas	Oil	Coal	Number of generators of electricity	Bark	
Northeast.....	8	-----	8	-----	1	4	-----
South Atlantic <sup>1</sup> .....	11	5	10	2	-----	9	-----
East south-central <sup>1</sup> .....	6	6	6	2	2	3	-----
West south-central <sup>1</sup> .....	12	10	6	1	2	3	1
North-central.....	4	2	2	3	-----	9	-----
Mountain/Pacific.....	5	5	5	-----	-----	1	-----
Total, United States.....	46	28	37	8	5	29	1
Total, South <sup>1</sup> .....	29	21	22	5	4	21	-----

<sup>1</sup> Sources: "Lockwood's Director of The Paper and Allied Trades, 1976;" "Post's Pulp and Paper Directory, [1976;" company annual reports; industry information.

TABLE 2-8.—EMISSION CALCULATIONS

[1,000 tpd ADP]

	Emission rate, pounds per hour	
	SO <sub>2</sub>	Particulates
On-site power generation (966×10 <sup>6</sup> Btu/hr):		
Coal (1.2 lb. SO <sub>2</sub> /10 <sup>6</sup> Btu).....	1,127	235
Oil (0.8 lb. SO <sub>2</sub> /10 <sup>6</sup> Btu).....	840	189
Coal and bark.....	947	266
Oil and bark.....	725	220
Coal plus FGD (0.32 lb. SO <sub>2</sub> /10 <sup>6</sup> Btu).....	451	235
Low sulfur oil (0.3 lb. SO <sub>2</sub> /10 <sup>6</sup> Btu).....	451	189
Purchased power (777×10 <sup>6</sup> Btu/hr):		
Coal.....	1,000	216
Oil.....	688	180
Coal and bark.....	820	247
Oil and bark.....	570	211
Coal plus FGD.....	375	216

Note: For different size mills, emissions may be adjusted in direct proportion to size, i.e., 500 tpd mill emissions are 50 percent of above figures.

Model results for two prototype bleached kraft mills in varied terrain under three meteorological situations were used as a basis from which impact calculations were made. The methodology used to apply the air quality impact model results to the sample was devised solely as a screening procedure. Modeling would have to be performed for individual mills to determine if a restriction, in fact, exists. Nevertheless, the procedure was conservative and should give a

reasonable approximation to the results that could be obtained through individual modeling at each of the mill sites.

Analyses were performed for each site using the three site capacity scenarios and varied fuel use assumptions described in Section 2.0. The different factors examined in the study are summarized in Table 3-1. A summary of the provisions of the House and Senate proposals is contained in Appendix A.

### 3.1 Emission assumptions

Two prototype bleached kraft mills were modeled with 1,000 and 400 tons per day of capacity, respectively. Under all of the non-significant deterioration proposals, new kraft mills and modifications must use best available control technology (BACT). Any existing national new source performance standard that is applicable would meet this requirement under EPA's regulations. A more stringent definition might apply under the Senate and House proposals, principally with respect to the allowable emissions from the power boiler. In order to analyze the impact of the separate provisions under both the Senate and House nonsignificant deterioration proposals, the impact of proposed air quality increments under the area classification schemes are assessed assuming new additions need only comply with NSPS. Mills requiring additional control beyond NSPS in order to comply with the applicable increments are then identifiable. The economic analysis section assesses the costs to the industry of employing additional controls beyond NSPS.

Emission and plant design assumptions generally were based upon prototype kraft mill characteristics described in the report prepared by Environmental Research and Technology for the American Paper Institute (API) on the Impact of Non-significant Deterioration Proposals. The report was used principally to estimate fuel requirements and plant design characteristics. BACT for SO from the kraft recovery furnace was assumed to be 30 ppm (1.6 lb. per ton or 67 lb. per hour). Emissions for the coal and oil combustion cases were calculated directly from existing or tentative NSPS for kraft mills and steam generators, except that for particulate matter from oil combustion, the AP-42 uncontrolled emission factor was used. Where bark is being burned, the API report supplied the necessary data, adjusted to account for the lower SO emissions from the recovery furnace and lower particulate emissions from oil combustion, as discussed above.

TABLE 3-1.—Summary of analysis of sample kraft mills

#### CAPACITY SCENARIOS AT SAMPLE SITES

New Mills and Announced Capacity Expansion 1971-78.  
Total Sample Site Capacity including Existing Capacity in 1970.  
A 1,000 Ton Per Day Bleached Kraft Mill at Each Site.

#### FUEL USE SCENARIOS AT SAMPLE SITES

Coal Meeting NSPS (1.2 lbs.  $10^6$  Btu).  
Oil.  
Coal and Bark.  
Oil and Bark.  
House Mandatory Class I Area Designations.  
Low Sulfur Oil (0.30 lb.  $SO_2/10^6$  Btu).

#### NON-SIGNIFICANT DETERIORATION PROPOSALS

Senate/EPA Class II Increment.  
House Class II and Increments.  
House Class II and III Increments.  
Senate Mandatory Class I Area Designations.  
Coal Plus FGD (0.32 lb.  $SO_2/10^6$  Btu).  
House Discretionary Class Area Designations.  
House and Senate BACT requirements.

#### LESS THAN FULL USE OF THE CLASS II AND CLASS III INCREMENTS

Half the Senate Allowable Class II.  
Collocation of Kraft Mills in Sample.  
Collocation of Kraft Mills and Sample of 74 New Powerplants.  
3.2 Air quality modeling.

Four variations of air quality impact models were used to assess the potential air quality impact of prototype kraft mills depending upon the critical terrain and relevant meteorological conditions around the mill.

### 3.2.1 Class II and III impact analysis flat or moderate terrain case.

EPA's Single Source Model (CRSTER) was run for both the 1,000 and 400 ton per day prototype mills with actual meteorological data from sites in the northeast, northwest and southeast. The sites were chosen as representative of regions of the country where kraft pulping capacity is concentrated and where new mills have recently been constructed:

Concord, New Hampshire (Northeast)

Huntsville, Alabama (Southeast)

Portland, Oregon (Northwest)

The CRSTER model is used where terrain features are below the mill stack height. The results are summarized in Appendix B.

## TERRAIN EXCEEDING STACK HEIGHT

Where terrain is above the stack height but below the height where plume impingement was assumed to occur, maximum concentrations were assumed to occur under high wind, neutral stability conditions, (see Appendix B).

### PLUME IMPINGEMENT CASE

The EPA Valley model was run for the prototype 1,000 and 400 ton per day kraft mills to determine 3 hour and 24 hour concentrations for  $\text{SO}_2$ . The Valley model is applicable where terrain is equal to or greater than the combined height of the stack and plume under stable conditions. Air pollution concentrations are highest under this case because the plume impinges directly on elevated terrain. Meteorological assumptions and model results are presented in Appendix B. It would be noted that the Valley model uses worst case assumptions as input rather than actual meteorological conditions.

### 3.2.2 Class I impact analysis

## FLAT OR MODERATE TERRAIN

The Class I analysis is concerned with long distance transport. A Gaussian plume model assuming limited mixing within inversion layer was used (see Appendix B for specific assumptions and results).

### PLUME IMPINGEMENT CASE

As in the case of Class II and III, described in Section 3.2.1, the EPA Valley model was run for the prototype 1,000 and 400 ton per day kraft mills to determine 3 hour and 24 hour concentrations for  $\text{SO}_2$ . The Valley model is applicable where terrain is equal to or greater than the combined height of the stack plume as described in the previous subsection.

### 3.3 Application of model results to sample mill sites

As indicated in the previous section, terrain makes an important difference to predicted air pollution concentrations from a given source. Each sample mill, therefore, was mapped to determine whether critical topographical features exist at the site. UTM coordinates, and where available, longitude and latitude in seconds, were used to obtain as precise location of the mills possible.

Class II and III increments were examined within a 7 km radius (defined by the minimal air quality concentrations anticipated beyond this distance by the various models discussed above and detailed in Appendix B) to screen mills with:

a. stacks exceeding terrain by 100, 300, or 500 feet. [i.e., the "flat or moderate terrain case" where terrain is at or below the top of the stack]

b. terrain between the top of the mill stack and height of the plume rise under stable conditions

c. terrain above the stack plus plume rise. [i.e., the plume impingement case].

The distance and altitudes of critical terrain features were recorder and model results applied. For case (a) the CRSTER model results were applied to determine the concentration from a 1,000 ton per day mill meeting NSPS. In no case would there be a capacity limit imposed on mill sites with these terrain characteristics due to the low predicted concentrations. Therefore, such mills were

categorized as not constrained by Class II and III increments. For case (b), the Turner model results were used to predict air pollution concentrations. Where there was a terrain feature that led to plume impingement (case c) at a further distance within the critical 7 km radius, the high wind, neutral stability results were compared to the Valley model results used for case (c) and the higher concentration was selected. For case (c), the Valley model results were applied. To determine maximum allowable capacity at a site under the terrain conditions (b) and (c) where potential size limitations may arise, the concentrations of the graphs in Appendix B for 100 lb./hour were adjusted for different fuel mix assumptions from Table 2-8 and any levels above allowable increments were scaled proportionately to meet the increment and reflect reduced size below 1,000 tons per day. Similar scaling factors were used to adjust for allowable capacities greater than 1,000 tons per day.

Maximum allowable capacities for the sites under the various allowable increments and fuel mixes were then compared to the three capacity scenarios to identify any capacity limitations or fuel use constraints. Sample mill sites also were mapped to determine the direction and distance of Class I area designations. If the Class I area was located at a distance within which the applicable Class I increment could be exceeded, the terrain was determined within the Class I area relative to the stack height of the sample mill. Depending upon whether significant terrain characteristics existed, the Valley model or Limited Mixing Model results were applied.

#### 4.0 Class II and Class III impacts

##### 4.1 New mills and capacity expansion announced since 1971

All announced new mills and capacity increases in the Kraft industry since 1971, which represented a total capacity of 17,067 tons per day, could have been built at planned sites under both the Senate and House Class II increments if the non-significant deterioration programs were applicable. No additional control technology would be required nor altered fuel use. All announced capacity increases could even have been built if all the new mill and additions burned coal meeting NSPS. The conclusion is unaffected if actual stack height, i.e., 200 feet instead of the assumed stack heights of 300 feet, is used in the analysis. (See Tables 4-1 and 4-2.)

##### 4.2 Total capacity at sample mill sites

Under the Senate Class II increment, total capacity at sample sites, including announced additions since 1971 could be duplicated without restriction (using planned fuels with no additional control technology) at all but five mill sites. (See Table 4-1.) Three of the mills are in the northeast and two are in the mountain and pacific region. Capacity that would have been precluded if the mills did not alter fuel use would be 1,460 tons per day of capacity, only 3.2% of the total sample. This represented 632 tons per day in the northeast (10% of regional capacity in the sample), and 828 tons per day in the mountain and pacific region (16% of regional capacity in the sample). If the five mills burned low sulfur oil or used a stack gas scrubber with coal only 160 tons per day of capacity in the northeast at two mill sites would have been precluded representing only .04 percent of total sample capacity or 2.6 percent of northeast regional capacity in the sample. Under the most conservative and unlikely assumption that all of the sample mills burned coal just meeting NSPS, all but the five mills could duplicate total site capacity under the Senate Class II increment without any additional pollution control beyond that which is already required under the Clean Air Act (NSPS). To prevent a total of 2,902 tons per day of capacity representing 6.5% of the total sample capacity from being precluded, these five mills would have to employ a stack gas scrubber in order to burn locally available coal. With the use of a scrubber only 160 tons per day would be precluded.

Under the House Class II increment total capacity at sample sites, including announced additions since 1971 also could be duplicated without restriction (using planned fuels with no additional control technology) at all but five mill sites. (See Table 4-2.) Three of these sites are in the northeast and two are in the mountain and pacific region. Assuming actual fuel burned at these sites, capacity limitations at the five mill sites total 2,240 tons per day in the northeast (17% of regional capacity in the sample), and 1,211 tons per day in the mountain and pacific region (24% of regional capacity in the sample). If the five mills that were affected used low sulfur oil or a scrubber with coal, the total sample capacity would still be limited at four mill sites. However, only 473 tons per day or 1% of the sample capacity nationwide would be precluded.

TABLE 4-1.—CUMULATIVE IMPACTS UNDER ALTERNATIVE NONSIGNIFICANT DETERIORATION PROPOSALS

Senate proposal	Number of mills		Total capacity in sample			
Baseline for study:						
1971-78 additions.....	46		17,067			
Total sample site capacity.....	46		44,817			
Prototype 1,000 ton per day.....	46		46,000			
	Senate class I		Senate class II		Aggregate impacts	
	Number of mills affected	Capacity affected (tons per day) <sup>1</sup>	Number of mills affected	Capacity affected (tons per day) <sup>1</sup>	Number of mills affected	Capacity affected (tons per day) <sup>1</sup>
Oil and bark:						
1971-78 additions.....						
Total sample site capacity.....			5		5	
Prototype 1,000 ton per day.....	1	441	5	1,457	6	1,457
Coal/NSPS:						
1971 additions.....						
Total sample site capacity.....	2	542	5	2,902	6	3,185
Prototype 1,000 ton per day.....	1	441	5	2,377	5	2,377
Coal/NSPS/FGD or low sulfur oil:						
1971-78 additions.....						
Total sample site capacity.....			2		2	
Prototype 1,000 ton per day.....			2		2	

<sup>1</sup> These numbers represent capacity precluded under the capacity and fuel scenario indicated. It should be noted, however, that under the assumption that total site capacity or the prototype 1,000 ton per day mill would be built new, these mills also have the option of alternative sites or a reduction in size.

TABLE 4-2.—CUMULATIVE IMPACTS UNDER ALTERNATIVE NONSIGNIFICANT DETERIORATION PROPOSALS

House proposal	Number of mills		Total capacity in sample					
Baseline for study:								
1971-78 additions-----	46		17,069					
Total sample site capacity----	46		44,817					
Protype 1,000 ton per day----	46		46,000					
	House Class I <sup>1</sup>		House Class II		House Class III		Aggregate impacts <sup>2</sup>	
	Number of mills affected	Capacity affected (tons per day) <sup>3</sup>	Number of mills affected	Capacity affected (tons per day) <sup>3</sup>	Number of mills affected	Capacity affected (tons per day) <sup>3</sup>	Number of mills affected	Capacity affected (tons per day) <sup>3</sup>
Oil and bark:								
1971-78 additions-----								
Total sample site capacity----	1	385.0	5	2,240	1	49	2	434
Prototype 1,000 ton per day-----			4	1,891	2	432	2	432
Coal/NSPS:								
1971-78 additions-----								
Total sample site capacity----	3	657	5	3,121	5	1,285	7	1,863
Prototype 1,000 ton per day----	3	—969	6	2,741	3	1,326	5	2,016
Coal/NSPS/FGD or low sulfur oil:								
1971-78 additions-----								
Total sample site capacity-----			4	473				
Prototype 1,000 ton per day-----			3	906				

<sup>1</sup> Class I includes both House mandatory and discretionary areas. It should be noted, however, that only House discretionary class I areas had any effect on kraft mill sites.

<sup>2</sup> Aggregate impacts include House class III and House I impacts only.

<sup>3</sup> These numbers represent capacity precluded under the capacity and fuel scenario indicated. It should be noted, however, that under the assumption that total site capacity or the prototype 1,000 ton per day mill would be built new; these mills also have the option of selection of alternative sites or a reduction in size.

This represents 299 tons per day of capacity in the northeast (5% of regional capacity in the sample), and 174 tons per day of capacity in the mountain and pacific region (3% of regional capacity in the sample) which would be precluded if industry capacity were duplicated under the nonsignificant deterioration requirements.

If the regions with the five mill sites were reclassified Class III under the House NSD proposal, capacity at only one mill site would have to use lower sulfur oil or stack gas scrubbing with coal to prevent 50 tons per day of capacity from being precluded.

Under the most conservative and unlikely assumption that all of the sample mills burned coal just meeting NSPS, all but five mills could duplicate total capacity under the House Class II increment. To prevent 3,121 tons per day or 7 percent of total sample capacity from being precluded if the mills burned coal, the five mills would have to employ a stack gas scrubber which would leave the capacity impacts noted above. However, if the regions with these mill sites were reclassified to Class III under the House proposal, capacity at only one mill site would have to use either lower sulfur oil or scrubbers with coal to prevent 50 tons per day of capacity from being precluded.

#### 4.3 Prototype 1,000 ton per day bleached kraft mill

1,000 ton per day bleached kraft mills burning coal to generate all electrical capacity on-site could be located at all but five (under the Senate Class II increment) or six (under the House Class II increment) of the 46 sites in the sample. Three or four of these sites are located in the northeast and two are located in the mountain and pacific region. An increase or decrease in stack height would not change the results.

With the use of a scrubber or low sulfur oil at the mills, however, all but two mill sites could expand up to 1,000 tons per day under the Senate Class II increment. Both of the affected mill sites are located in the northeast and are located in extremely steep terrain (i.e., 6.4 and 11 percent slope, respectively). Capacity at these sites is limited to 693 and 888 tons per day, respectively. This represents a loss of 1 percent of the total sample capacity if it were assumed that a 1,000 ton per day mill were built at each of the 46 sites in the sample.

With the use of a scrubber or low sulfur oil, all but three of the mill sites with capacity constraints using coal meeting NSPS could expand up to 1,000 tons per day under the House Class II increment. Two of these mill sites are located in the northeast and one mill is located in the mountain and pacific region. Capacity at these sites is limited to 578, 688 and 828 tons per year, respectively. This represents a loss of 2% of total sample capacity if it were assumed that a 1,000 ton per day mill were built at each of the 46 sites in the sample. Total site capacity of 1,000 tons per day could be built at all but two mill sites if the area around six mill sites were reclassified to Class III under the House NSD proposal. Capacity precluded at the two mill sites in the northeast would only be 432 tons per day all of the 1,000 ton per day capacity and could be built if low sulfur oil were used. Similarly, if coal were required as a fuel, and three of the mills were to use stack gas scrubbers, reclassification to Class III would allow all of the 1,000 ton per day capacity to be built.

#### 5.4 Impact of allowing less than full use of the class II increment

##### 5.1 Half the allowable class II increment

Some industry spokesmen have expressed concern that faced with an intractable air quality limit under which a State would have to absorb reasonable economic growth, a State might consider limiting a given industrial source to only half of the Class II increment. While none of the non-significant deterioration proposals limit the full use of allowable increments and there is no precedent for the imposition of such limitations in implementation measures already established under the existing Clean Air Act requirements, the analysis of this scenario was performed.

##### 5.1.1 New mills and capacity expansions announced since 1971

All new mills and all but one capacity expansion in the sample could be built if the capacity additions were only permitted to utilize half of the Senate Class II increment. Ten tons per day that would otherwise be precluded could be built if low sulfur oil were used at the mill. All but three mill expansions could burn coal meeting NSPS and generate all electricity on-site and still comply with these requirements. It would be necessary to use a stack gas scrubber at the three mills if capacity additions were both forced to shift to coal and limited to half of the Class II increment as defined under the Senate proposal. All of these mills are in the northeast.

All new mills and all but two expansions could be built if the mills were only permitted to utilize half of the House Class II increment, 102 tons per day at the two mill sites that would otherwise be precluded could be built if low sulfur oil were used. All but four mill expansions could burn coal meeting NSPS and generate all electricity on-site and still comply with these requirements. It would be necessary to use a stack gas scrubber at the four mills if capacity additions were both forced to shift to coal and limited to half of the Class II increment as defined under the House proposal. Three of these mills are in the northeast and one is in the north central region. If areas around all of the affected mill addi-

tions were reclassified to Class III, all of the mill expansion could burn coal meeting NSPS and comply with half of the allowable Class III increment.

#### 5.1.2 Total capacity at sample sites

Total capacity at sample sites could be duplicated under the Senate Class II proposal at all but five mill sites if the mills were limited to half the allowable increments. Three of these sites are in the northeast, two are in the mountain and Pacific region. Capacity that would be precluded under half the Senate Class II increment without the use of additional control technology or altered fuel use would total 3,166 tons per day of 7% of capacity nationwide. This would be comprised of 1,363 tons per day of northeast capacity (23% of regional capacity in the sample) and 1,803 tons per day of mountain and Pacific capacity (35% of the regional sample). If low sulfur oil were used at five of the mills in the sample, constrained capacity would only be 1,594 tons per day under half the Senate Class II increments representing a loss of .5 percent of total sample capacity at the 46 sites. The regional breakdown of precluded capacity under half of the Senate Class II increment would be 242 tons per day in the northeast region (4% of regional capacity in the sample) and 1,352 tons per day in the mountain and Pacific region (26% of regional capacity in the sample). The same results would occur if all but five sample mills burned coal meeting NSPS and the five mills employed stack gas scrubbers.

Under half of the allowable House Class II increment, total sample capacity that would be precluded without the use of additional control technology or altered fuel use would total 3,794 at five sites or 8.5% of the total sample site capacity. The regional breakdown would be 1,740 tons per day of capacity in the northeast (29% of regional capacity in the sample) and 2,054 tons per day of capacity would be precluded under half of the allowable House Class II increment. If all five mills used low sulfur oil, 2,371 tons per day (53% of total sample capacity) would be precluded under half of the allowable House Class II increment. This represented 834 tons per day of capacity in the northeast (14% of regional capacity in the sample) and 1,537 tons per day in the mountain and Pacific region (30% of regional capacity in the sample). Half of the Class III increment under the House proposal would have the same impact as the full House Class II. If all sample mills were forced to burn coal, seven mill sites would require stack gas scrubbers in conjunction with locally available coal if only permitted to utilize half of the allowable House Class II increment. Once again, if allowed only half of the Class III increment under the House proposal, capacity limitations and the need for additional control technology would be the same as that noted for the full Class II increment.

#### 5.1.3. Prototype 1000 ton per day bleached kraft mill

If only half of the Senate or House Class II increment were allowed and if a 1,000 ton per day bleached kraft mill burning coal meeting NSPS and generating all electrical capacity on-site were built at each of the 46 sample sites, only six mill sites would experience capacity constraints. Four of these sites are in the northeast, two are in the mountain and Pacific region.

The use of low sulfur oil or a scrubber would eliminate constraints at one of the northeast mill sites under half of both the Senate and House Class II increments and would eliminate constraints at one of the mountain and Pacific sites under half of the Senate Class II. Affected capacity at the other four or five mill sites under these assumptions would be reduced to 1,910 and 2,349 tons per day, respectively, under half of the Senate and House Class II increments. This represents a loss of 4.2 percent and 5.1 percent of total capacity, respectively, under half of the Senate and House Class II proposals if all 46 mill sites supported 1,000 tons per day of capacity. Impacts under half of the allowable House Class III increment, assuming affected mills employ control beyond NSPS are comparable to those impacts identified under the full use of the allowable House Class III. These impacts were significant, 50 tons per day at one mill site.

#### 5.2 Colocation of kraft pulp mills

The modeling studies indicate that at least two 1,000 ton per day Kraft pulp and paper mills fueled by coal meeting NSPS could be located at one site in areas of flat or moderate terrain. In areas of hilly terrain, however, the collocation of two such mills would require some spacing or additional control technology. Two 1,000 ton per day mills meeting NSPS would have to be located 20 to 22 km. apart under the Senate and House Class II increments, respectively, in hilly terrain. The House Class III would facilitate collocation in hilly terrain and reduce this distance to as close as 13 km. Mills could employ additional control technology beyond NSPS to permit siting at closer distances. For example, two such 1,000

ton per day mills controlled beyond NSPS would have to be located only 13 to 16 km. apart in hilly terrain in the East and 5 to 7 km. apart in the West under the Senate and House Class II increments. Again the House Class III increment in conjunction with control beyond NSPS would allow siting of the 1,000 ton per day mills 3 to 10 km. apart in hilly terrain in the West and East.

An analysis of the distances between the 46 industry sites under study indicated that only one mill site in the northeast would have been limited by the location of a second mill within close proximity to it. However, the limitations imposed on the mill capacity were identical to those imposed by the full Class II increments due to the topography around the mill. Only one of the two mills were affected because the topographical features imposed limitations for winds blowing only one direction.

The pulp mills tended to be located in remote areas with ample spacing between mills to avoid potential problems.

### 5.3 Collocation of kraft pulp mills and power plants

None of the mill sites in the sample would have been limited because of proximity to coal-fired power plants.

### 6.0 Impact of class I area designations

#### 6.1 New mills and capacity additions announced since 1971

No announced expansion or new mill built between 1971-78 would have been affected by the Senate or House Class I mandatory or discretionary area designations. The results are summarized in Table 4-1 and 4-2.

#### 6.2 Total capacity at sample mill sites

##### 6.2.1 Senate mandatory class I areas

Total capacity at sample mill sites could be built without altered fuel use or control technology given the current Senate mandatory Class I area designations. All but two mills would be unaffected even if total capacity at the sample sites including announced additions through 1978 burned coal meeting NSPS with complete on-site electrical generation. One of these sites is in the northeast, the other is in the southeast. The total capacity of the affected mills could be built, however, if they burned oil and bark. Therefore, even if all mills were forced to burn coal, the one mill in the northeast and one mill in the southeast, with total potential capacity losses representing only 2 percent of the sample capacity which could be precluded if the mills just met NSPS, could be built if scrubbers were used with the coal.

##### 6.2.2 House mandatory and discretionary Class I areas

Total capacity at sample mill sites could be built given the current House mandatory built given the current House mandatory and discretionary Class I designations. Only one mill in the sample in the west south central region would have to take any additional steps to comply with non-significant deterioration requirements by burning low sulfur oil or using a scrubber with coal. If forced to burn coal, three mills would have been affected by the House Discretionary Class I area designations if total capacity at the sites including announced additions through 1978 burned coal meeting NSPS with complete on-site electrical generation. Two of these mills were in the northeast, one in the west south central area. The total capacity of the two affected mills in the northeast could be built if oil were burned or bark were burned along with coal. All of the 1,400 ton per day mill capacity in the west south central could be built if low sulfur oil were used or if a stack gas scrubber were used with the coal.

### 6.3. Prototype 1,000 ton per day bleached kraft mill

#### 6.3.1 South mandatory class I areas

One mill site would have been affected by Senate Mandatory Class I designations if a 1,000 ton per day capacity bleached kraft mill burning coal meeting NSPS and generating all electricity on-site were built at each of the sample sites. The capacity at the site would be limited to 541 tons per day. A 1,000 ton per day mill could be located even at the affected site if the mill burned low sulfur oil or used a stack gas scrubber with the coal.

#### 6.3.2. House mandatory and discretionary class I areas

Prototype 1,000 ton per day bleached Kraft mills and could be built at all sample sites if at three affected mill sites the mills used either low sulfur oil or a stack gas scrubber in conjunction with locally available coal. Two of these sites were in the northeast, one was in the westsouth central region. Under the most conservative assumptions, capacity at three sites could be limited to 655, 655 and 721 tons per day, respectively, if the prototype 1,000 ton per day bleached Kraft mills used coal meeting NSPS.

7.0 Cumulative capacity and economic impacts of alternative non-significant deterioration proposals

Cumulative impacts on the Kraft industry of alternative non-significant deterioration proposals are summarized in Tables 4-1 and 4-2. As can be seen in the tables once additional pollution control is employed at those select mills whose capacities are adversely affected by the allowable air quality increments, capacity constraints are minimal, less than one percent of sample capacity. The important issue that is explored in the following analysis is the cost of meeting the applicable air quality increments and best available control technology provisions under non-significant deterioration proposals and any regional effects that would lead to regional dislocation or particular regional advantage.

#### 7.1 Costs of compliance

To determine the price and cost effects of compliance with non-significant deterioration proposals, baseline costs were compared to the two pollution control scenarios: low sulfur oil and the use of a stack gas scrubber in conjunction with locally available coal. To simplify the analysis it was assumed that the entire capacity of the mill would be fueled by low sulfur oil or supported by a stack gas scrubber if it were determined that any capacity would be constrained by the applicable air quality increments. This means that the costs reported for meeting the proposed air quality increments are conservative as only partial use of the low sulfur fuel or stack gas scrubber is necessary in most cases.

Baseline industry costs are estimated using a new 800 ton per day bleached Kraft market pulp mill. In mid-1975 dollars, the capital costs were assumed to be \$196 million and operating and maintenance costs were estimated at \$181 per ton per day. Annual costs were calculated to reflect both operating and maintenance costs and annualized cost of capital at 18%. These numbers were derived by Arthur D. Little Inc. The assumed new mill costs were used solely for two of the capacity scenarios, i.e., total sample site capacity and the 1,000 ton per day prototype mill. Costs would vary. The assumed new mill costs were used considerably among the mills for the expansions in the sample announced since 1971, and there was no need for additional pollution control identified for the announced new mills and capacity expansions since 1971. Therefore, baseline estimates were not derived for this scenario. A fuel penalty of \$.20 per million Btu was imposed for mills that were forced to employ low sulfur oil. This is considered to be the preferred control for most mills as they were currently burning oil and bark. If all mills are forced to increase the use of coal, it was assumed that stack gas scrubbers would be employed at costs indicated in Table 7-1.

For the prototype 1,000 ton per day new kraft mill, a maximum annual cost penalty of \$1.6 million or 1.5% of total annualized costs including capital and operating costs would be imposed if the mill were forced to burn low sulfur oil. In the unlikely event that mills were forced to shift to coal as a fuel, a mill may have an additional expense of \$12.8 to \$13.7 million or 7% increase in capital cost of the mill and an increase in total annualized cost of \$4 million or a 3.7% increase if the mill were forced to use a stack gas scrubber along with locally available coal. As noted previously in most instances affected mills would not be required to reduce emissions to this extent in order to meet the proposed air quality and if these mills were, in fact, to be rebuilt under new NSD requirements siting, design and capacity alternatives would be available to significantly reduce if not eliminate these potential costs.

Nationwide, the costs of meeting the Senate and House proposed non-significant deterioration air quality increments appear to be minimal, less than a one percent increase in capital costs and approximately one percent increase in annual costs if 43% of total kraft pulping capacity including announced additions through 1978 were duplicated. These conclusions remain the same even if the mills were forced to burn coal. Table 7-2 summarizes the economic cost analysis assuming the capacity under study need only meet NSPS and was utilizing fuels actually burned.

#### 7.2 Costs of compliance with BACT requirements

A separate provision under both the Senate and House non-significant deterioration proposals requires all new mills and capacity expansions to employ best available control technology (BACT) regardless of whether the mills will comply with the proposed air quality increments merely by meeting national new source performance standards (NSPS). The House BACT provision requires EPA to establish for national applicability more stringent new source performance standards than currently exist. For the purposes of analysis, the House BACT provision is conservatively interpreted as requiring either low sulfur oil (.3 lb. SO<sub>2</sub>/million BTU), or stack gas scrubbers to be employed with high sulfur coal (.32 SO<sub>2</sub>/million BTU), on all new mills as described in Table 7-1. The Senate provision is interpreted as a range of costs with the House requirements as an

upper bound and EPA's current NSPS as a lower bound depending upon the case-by-case determinations made by a State.

Tables 7-3 and 7-4 are analyses of the cost impact of the BACT provisions on sample site capacity scenarios as compared to costs of just meeting the air quality increments. For additions through 1978, control costs take actual expansion size into account. As Table 7-1 indicates, there is a decrease in control costs per ton of capacity for larger additions due to economies of scale. For the other two sample site capacity scenarios, i.e., duplicating total sample site capacity and constructing a prototype 1,000 ton per day bleached kraft mill at each sample site, control costs were based on the 1,000 ton per day prototype mill. In determining baseline costs, the capital and annual costs were based on the prototype 800 ton per day bleached kraft mill described in section 7.1.

TABLE 7-1.—COST OF ADDITIONAL EMISSION REDUCTION BEYOND NSPS FOR PROTOTYPE BLEACHED KRAFT MILLS

	In millions of dollars <sup>2</sup>		
	Capital	O,M	Annual
250-ton-per-day bleached kraft mill: <sup>1</sup>			
Baseline.....	61.35	16.06	27.085
Incremental increases:			
Oil: Low sulfur.....		.412	.412
Coal:			
Scrubber with sulfur recovery <sup>1</sup> .....	4.3	.707	1.481
Scrubber without sulfur recovery.....	4.0	.719	1.439
1,000-ton-per-day bleached kraft mill:			
Baseline.....	245.0	64.26	108.36
Incremental increases:			
Oil: Low sulfur.....		1.65	1.65
Coal:			
Scrubber with sulfur recovery <sup>1</sup> .....	13.7	1.474	3.941
Scrubber without sulfur recovery.....	12.8	1.713	4.017

<sup>1</sup> Assumes an operative cost savings of \$20 per ton of sulfuric acid or salt cake due to sulfur recovery. This is \$320,000 for the 1,000-ton-per-day mill and \$25,000 for the 250-ton-per-day mill.

<sup>2</sup> Annual cost includes cost of capital at 18 percent.

Source: PEDCo Environmental.

TABLE 7-2.—COSTS OF ADDITIONAL CONTROL BEYOND NSPS TO MEET SENATE AND HOUSE NONSIGNIFICANT DETERIORATION INCREMENTS <sup>1</sup>

	Capitol costs (millions)	Annual costs (millions)	
Baseline: <sup>3</sup>			
1971-78 additions.....	NA	NA	
Total sample site capacity.....	\$10,980	\$2,037	
Prototype 1,000 ton per day.....	11,270	1,984	
	Coal as fuel		
	Capital costs	Annual costs	Oil as fuel annual costs
INCREMENTAL COSTS INCREASES			
Senate proposal:			
1971-68 additions.....			
Total sample site capacity.....	78-83	24	10
Prototype 1,000 ton per day.....	64-69	20	10
House proposal:			
No class III:			
1971-78 additions.....			
Total sample site capacity.....	99-106	31	13
Prototype 1,000 ton per day.....	102-110	22	10
Class III:			
1971-78 additions.....			
Total sample site capacity.....	99-106	31	13
Prototype 1,000 ton per day.....	64-69	20	8

<sup>1</sup> These estimates assume that all new additions need only meet current NSPS and that all of the capacity at affected mill sites would have to burn either low sulfur oil, under the oil option, or employ stack gas scrubbers in conjunction with medium sulfur coal to comply with applicable class I, II, or III increments.

<sup>2</sup> Annual costs include operating and maintenance expenses plus annualized capital costs at 18 percent.

<sup>3</sup> Baseline costs are estimated on the basis of a prototype 800-ton-per-day mill as explained in the text. This was deemed to be inappropriate for the small expansions included in the analysis of 1971-78 additions; therefore, no estimates were made for this capacity scenario.

TABLE 7-3.—CAPITAL COSTS OF COMPLIANCE WITH BEST AVAILABLE CONTROL TECHNOLOGY REQUIREMENTS<sup>1</sup>

	Coal as fuel				
	1971-78 additions	Total sample site capacity		Prototype 1,000 ton per day	
Baseline: <sup>2</sup>					
Capacity (tons per day).....	17,607	44,817		46,000	
Capital cost (dollars in millions).....	N/A	\$10,980		\$11,270	
	Cost (dollars in millions)	Cost (dollars in millions)	Percent increase	Cost (dollars in millions)	Percent increase
Incremental cost increases: <sup>3</sup>					
Senate/BACT <sup>4</sup> .....	0-258	78-574	1-5	64-589	1-5
House/BACT.....	258	574	5	589	5
Senate/NSPS.....	0	78	1	64	1
House/NSPS <sup>5</sup> .....	0	99	1	64-102	1

<sup>1</sup> Control beyond NSPS as may be required under the Senate and House provisions requiring best available control technology (BACT) was assumed to require the use of stack gas scrubbers in conjunction with coal on all new additions as a worst case analysis. Low sulfur oil is another possible additional control requirement beyond NSPS, however, its use imposes no additional capital costs for the pulp and paper industry.

<sup>2</sup> Baseline costs were derived from a prototype 800-ton-per-day bleached kraft mill as explained in the text.

<sup>3</sup> Costs represent costs of scrubbers without sulfur recovery.

<sup>4</sup> The Senate provision permits States to define BACT on a case-by-case basis, therefore, Senate costs are presented as a range from the costs of just meeting the applicable increments (NSPS) to the costs of compliance with the requirements to control beyond NSPS for all new mills.

<sup>5</sup> The low end of the House cost range represents costs associated with the House Class III increment; the upper range assumes that mills are only allowed to use the House Class II increment.

TABLE 7-4.—ANNUAL COSTS OF COMPLIANCE WITH BEST AVAILABLE CONTROL TECHNOLOGY REQUIREMENTS<sup>1</sup>

	1971-78 additions		Total sample site capacity		Prototype, 1,000 tons per day	
	Oil	Coal	Oil	Coal	Oil	Coal
Baseline:						
Capacity.....			44,817		46,000	
Annual cost (millions) <sup>2</sup> .....			\$4,856		\$4,985	
Incremental cost increases (millions of dollars):						
Senate/BACT <sup>3</sup> .....	0-28	0-93	10-74	24-180	10-73	20-185
House/BACT.....	28	93	74	180	73	185
Senate/NSPS.....	0	0	10	24	10	20
House/NSPS <sup>4</sup> .....	0	0	13	31	8	20

<sup>1</sup> Control beyond NSPS as may be required under the Senate and House provisions requiring best available control technology (BACT) was assumed to require the use of stack gas scrubbers in conjunction with coal on all new additions as a worst case analysis. Costs are also derived for the worst case assumption that all new additions were required to burn low sulfur oil.

<sup>2</sup> Annual costs are operating and maintenance costs plus annualized capital costs.

<sup>3</sup> The Senate provision permits the States to define BACT beyond NSPS on a case-by-case basis, therefore, Senate costs are presented as a range from the costs of just meeting the applicable increments assuming mills just have to meet NSPS up to the costs of compliance with the requirement that all new mills control beyond NSPS.

<sup>4</sup> Estimates assume that all affected mills are allowed to increase pollution up to the Class III increment.

As can be seen in Tables 7-3 and 7-4, the capital cost of employing scrubbers with locally available coal, which is a worst case assuming all new additions burn coal, would only cause a 5% increase in industry capital requirements under the various scenarios. Annual costs (including operating and maintenance plus annualized capital costs) would increase by a maximum of only 2 to 4% depending upon whether new additions use lower sulfur oil or stack gas scrubbers with coal. When costs of control for the period 1971-78 were projected over the industry as a whole, as was done for the decade 1980-90 (see Table 7-5), annual costs would increase a maximum of 1.5% by 1990. Thus, the costs of even the most stringent control alternatives, nationwide, should not impose a significant burden on the industry.

### 7.3 Regional impacts

As discussed in Section 2, for the purposes of analysis the country was divided into six economic regions based upon U.S. Economic Census data. The alternative

non-significant deterioration proposals affected the national economic regions quite differently. The regions with the principal impacts are presented in Tables 7-6 and 7-7. No new mills or capacity expansions since 1971 were required to alter fuel use or utilize additional control technology to comply with Senate or House increments. However, if total capacity at sample sites were duplicated under proposed Senate Class I and Class II increments, 16% of capacity in the mountain and Pacific region and 10% of capacity in the northeast would have been precluded if additional controls were not employed or fuel use altered. These numbers increase to 31% and 22% in each region, respectively, if it is assumed that coal meeting NSPS is burned at all mills in the sample. Under the proposed House Class I and Class II increments 24% of capacity in the mountain and Pacific region and 17% of capacity in the northeast would have been precluded if additional pollution control were not employed. These numbers increase to 35% and 24% in each region, respectively, if it is assumed that coal meeting NSPS is burned at all mills in the sample. Other regions of the country would have had no impact or minimal impacts on total sample mill capacity.

TABLE 7-5.—PROJECTED COST AND IMPACT OF BEST AVAILABLE CONTROL TECHNOLOGY REQUIREMENTS 1980-90<sup>1</sup>

(Dollar amounts in millions)

	Capacity (tons per day)	Capital cost	Annual cost	
<b>Baseline:<sup>2</sup></b>				
Projected:				
Total U.S. <sup>3</sup> capacity 1990.....	155,000	\$38,000	\$20,000	
Capacity additions 1980-90.....	44,000	10,900	4,800	
	Cost	Percent increase	Cost	Percent increase
<b>Incremental cost increases:</b>				
Oil: Low sulfur.....			\$73	2
Coal: Scrubber without sulfur recovery.....	\$533	5	279	6
Coal: Scrubber with sulfur recovery.....	607	5	178	4

<sup>1</sup> These estimates represent the cost of BACT under the House provisions assuming mills would either be required to use low sulfur oil or employ a stack gas scrubber in conjunction with high sulfur coal to comply with the House definition of BACT beyond current NSPS. The Senate provisions leave the definition of BACT to a case-by-case determination by the States. Therefore under the Senate proposed amendments these costs are a maximum range of costs.

<sup>2</sup> Baseline costs were derived from a prototype 800-ton-per-day bleached kraft mill as explained in the text.

<sup>3</sup> Capacity projections are approximate and are based upon a straight-line projection of anticipated capacity increases by A. D. Little, Inc. as noted in sec. 2.0 of this report.

TABLE 7-6.—REGIONAL IMPACTS: SENATE PROPOSAL (CLASS I AND II)

	Northeast		Mountain and Pacific		South Atlantic	
	Number of mills	Capacity	Number of mills	Capacity	Number of mills	Capacity
<b>Baseline in sample:</b>						
1971-78 additions.....	8	3,025	5	1,045	11	3,675
Total sample site capacity.....	8	6,055	5	5,130	11	13,075
Prototype 1,000 tons per day.....	8	8,000	5	5,000	11	11,000
	Number of mills	Capacity precluded	Number of mills	Capacity precluded	Number of mills	Capacity precluded
<b>IMPACTS</b>						
<b>Oil and bark:</b>						
1971-78 additions.....						
Total sample site capacity.....	3	632	2	828	1	43
Prototype 1,000 tons per day.....	2	1,021	1	375		
<b>Coal NSPS:</b>						
1971-78 additions.....						
Total sample site capacity.....	3	1,339	2	1,563	1	283
Prototype 1,000 tons per day.....	3	1,714	2	663		
<b>Low sulfur oil scrubbers:</b>						
1971-78 additions.....						
Total sample site capacity.....	1	72				
Prototype 1,000 tons per day.....	2	419				

TABLE 7-V.—REGIONAL IMPACTS: HOUSE PROPOSAL (CLASSES I, II)<sup>1</sup>

	Northeast		Mountain and Pacific		West south-central	
	Number of mills	Capacity	Number of mills	Capacity	Number of mills	Capacity
Baseline in sample:						
1971-78 additions.....	8	3,025	5	1,045	12	6,362
Total sample site capacity.....	8	6,055	5	5,130	12	12,647
Prototype 1,000 tons per day.....	8	8,000	5	5,000	12	12,000
	Number of mills	Capacity precluded	Number of mills	Capacity precluded	Number of mills	Capacity precluded
IMPACTS						
Oil and bark:						
1971-78 additions.....						
Total sample site capacity.....	3	2,029	2	1,211	1	385
Prototype 1,000 tons per day.....	3	1,404	1	487		
Coal NSPS:						
1971-78 additions.....						
Total sample site capacity.....	5	1,456	2	1,810	1	745
Prototype 1,000 tons per day.....	5	2,441	2	910	1	345
Low sulfur oil/scrubbers:						
1971-78 additions.....						
Total sample site capacity.....	2	299	2	174		
Prototype 1,000 tons per day.....	2	734	1	172		

<sup>1</sup> Note that reclassification to class III under the House proposal would significantly reduce these impacts. See table 4-2.

Almost all of this capacity could have been built in these regions if low sulfur oil or scrubbers were employed. The reasons for the variation in regional impact were the terrain characteristics in the northeast and mountain and Pacific regions. Capacity constraints that were identified under the Senate and House Class II increments occurred at mill sites in very hilly terrain with slopes greater than 6% within a 7 km radius around the mill. Among the sites in the sample, such terrain features were found exclusively in the northeast and mountain and Pacific regions. Siting will have to be more selective in these areas of the country. Nonetheless, low sulfur oil option for the impacted mills will not impose a significant cost (less than 5% of annual costs) and should allow most any economically sized mill to be built in terrain that is not extreme. Moreover, if all new capacity additions were required to employ control beyond NSPS, there would be much less distinction in impacts between regions. The House provisions requires EPA to determine what additional controls are required. The Senate provision leaves the question of additional controls up to the discretion of the individual State.

#### APPENDIX A: ALTERNATIVE POLICIES FOR THE PREVENTION OF SIGNIFICANT DETERIORATION AND RELATED POLICY ISSUES

As indicated in Table A-1, the general approach to "significant deterioration" taken by EPA and by the Congressional Subcommittees is similar, although numeric limits and coverage vary considerably. In all cases, significant deterioration is prevented by establishing area classifications designed to correspond to the overall air quality intended for the area, and to reflect the amount of energy or industrial growth desired. These "classes" were established by the EPA regulations as follows:

Class I—Applies to areas in which practically any air quality deterioration would be considered significant, thus allowing little or no energy or industrial development.

Class II—Applies to areas in which deterioration that would normally accompany moderate, well-controlled growth would not be considered significant.

Class III—Applies to areas in which deterioration would be permitted to allow concentrated or very large scale energy or industrial development, as long as the national secondary ambient air quality standards are not exceeded.

It should be noted that a critical aspect of the EPA regulations is that all regions are initially designated as Class II, subject to redesignation as Class I or Class III by initiative at the State and local level. EPA anticipated that Class I designations would be made to protect existing clean air resources in areas such as national parks and wilderness areas, and the Class III redesignations would occur where State or local policies called for extensive industrial development,

requiring increment air quality increases up to the national ambient air quality standards. To date, no known formal application has been made by communities, states or Federal land managers to reclassify regions to the Class I or Class III designations.

TABLE A-1.—ALLOWABLE AIR QUALITY INCREMENTS UNDER ALTERNATIVE SIGNIFICANT DETERIORATION PROPOSALS

Pollutant standard	Class I			Class II			Class III		
	EPA regulations	Senate proposal	House proposal <sup>1</sup>	EPA regulations	Senate proposal	House proposal <sup>1</sup>	EPA regulations <sup>2</sup>	Senate proposal	House proposal
	[ug/m <sup>3</sup> ]								
Sulfur dioxide:									
Annual.....	2	2	1.6	15	15	20	80	( <sup>2</sup> )	40
24 hr.....	5	5	7.3	100	100	91	365	( <sup>2</sup> )	183
3 hr.....	25	25	26.0	700	700	325	1,300	( <sup>2</sup> )	650
Total suspended particulates:									
Annual.....	5	5	7.5	10	10	19	75	( <sup>2</sup> )	38
24 hr.....	10	10	15.0	30	30	38	150	( <sup>2</sup> )	75

<sup>1</sup> The increments for the House proposal are based on limitations of 2 percent of NAAQS for class I, 25 percent for class II, and 50 percent for class III, except that the limit for total suspended particulates in class I is 10 percent of NAAQS. In addition, the House proposal stipulates that the concentration of all pollutants cannot exceed 50 percent of the national ambient air quality standards in any of the classes.

<sup>2</sup> EPA's class III allows degradation up to the NAAQS.

	Sulfur dioxide	TSP
Annual.....	a 80	a 75
24 hr <sup>b</sup> .....	a 365	b c 150
3 hr <sup>b</sup> .....	c 1,300	

a Primary.

b The 24-hr and 3-hr standards are not to be exceeded more than once per year. There are no primary 3-hr standards for sulfur dioxide and particulates, nor is there a 24-hr primary standard for particulates.

c Secondary

<sup>2</sup> No class III.

#### CLASS I AREAS UNDER SENATE AND HOUSE APPROACHES TO SIGNIFICANT DETERIORATION

##### *Senate* <sup>1</sup>

##### Mandatory Class I

International Parks, 5,000 acres and over.  
National Parks, 5,000 acres and over.  
National Wilderness Areas, 5,000 acres and over.  
National Memorial Parks, 5,000 acres and over.

##### *House* <sup>2</sup>

##### Mandatory Class I

National Parks, 25,000 acres and over.  
National Wilderness Areas, 25,000 acres and over.

##### Discretionary (Initially Class I can be made Class II)

National Parks, 1,000 acres and over.  
National Wilderness Areas, 1,000 acres and over.  
International Parks, 1,000 acres and over.  
National Preserves, 10,000 acres and over.  
National Monuments, 10,000 acres and over.  
National Primitive Areas, 10,000 acres and over.

<sup>1</sup> S. 3219 (Clean Air Act Amendments 1976), March 29, 1976.

<sup>2</sup> H.R. 10498 (Clean Air Act Amendments 1976), May 15, 1976.

TABLE A-3.—SUMMARY OF MAJOR DIFFERENCES OF ALTERNATIVE APPROACHES TO SIGNIFICANT DETERIORATION

Issues	EPA	House	Senate
Sources covered	19 source categories	Any facility emitting more than 100 tons/yr of any regulated pollutant.	Major emitting facility.
Pollutants covered	TSP and SO <sub>2</sub>	Best available control technology, determined on a case-by-case basis where NSPS does not exist.	TSP, SO <sub>2</sub> , others to be established later.
Control technology requirements	Equivalent to NSPS where NSPS exist; and determined on a case-by-case basis where NSPS does not exist.	No mandatory (at State and Federal discretion with procedures for full public participation).	Maximum degree of emission control achievable; determined on a case-by-case basis.
Class I areas	Procedures for designation of areas as class III	Procedures for designation of areas as class III.	Designation of some areas as mandatory class I and others to be designated by States as either class I or class II (see table A-2). No provision for class III.
Class III areas	See table A-1.	See table A-1.	See table A-1.
Numeric limitations for class II.	National ambient air quality standards (NAAQS).	Secondary national ambient air quality standards or 90 percent of national primary standards.	National ambient air quality standards.
Maximum allowed concentration	No limitation on stack height if the source installs best available control technology.	Stack height limited to 2½ times the height of the source unless a higher stack is necessary.	None specified.
Allowable stack height	No limitation on stack height if the source installs best available control technology.	Stack height limited to 2½ times the height of the source unless a higher stack is necessary.	None specified.

As indicated in Table A-1, the Senate numerical limits for Class I and II areas are the same as EPA's. However, the Senate approach has several substantial differences:

The Senate version eliminates Class III designations.

The Senate requires the designation of some areas of national importance as mandatory Class I and other areas as discretionary Class I unless they are redesignated by agreement between the States and the Federal government. (See Table A-2).

The House also adopts the EPA approach but contains the following differences:

The House has fewer mandatory Class I designations than the Senate. (See Table A-2).

The House version includes different numerical limits for the Class I and II increments, but the only significant difference is that the three-hour sulfur dioxide Class II increment is less than half of the EPA and Senate Class II increments. (See Table A-1).

The House, like EPA, has a Class III but the allowed increment is half the NAAQS. In addition, a general air quality ceiling of 90% of the national primary ambient air quality standards or 100% of national secondary ambient air quality standards, whichever is more stringent, is imposed.

The other important differences among the alternative proposals are summarized in Table A-3. One of these is related to the control technology a new power plant must install regardless of the applicable air quality increment. While EPA's significant deterioration regulations require compliance with New Source Performance Standards (NSPS) or State regulations where they are more stringent than NSPS, the Senate requires the maximum degree of control technology achievable as determined on a case-by-case basis. Similarly, the House proposal requires the best available control technology which (taking into account cost, other environmental impacts, and energy requirements) the Administrator of EPA has determined to be adequately demonstrated.

Another important difference is that the House proposal provides for limitations on the allowable stack height for new power plants. Specifically, the House proposal restricts the allowable stack height to two and a half times the height of the power plant unless the source can demonstrate that a greater height is necessary to insure that emissions from the source do not cause excessive concentrations of any air pollutant in the immediate vicinity of the source as a result of atmospheric downwash, eddies, and wakes.

#### APPENDIX B: AIR QUALITY IMPACT OF NEW KRAFT PULP MILLS

To assist in determining the impact of the House and Senate significant deterioration amendments on Kraft pulp mills, the air quality impact of two mill sizes was examined under various stack height and terrain conditions. The results are intended to be used as a screening procedure only; specific modeling must be performed for individual mills to determine if a restriction, in fact, exists.

##### *Modeling assumptions*

EPA's Single Source Model (CRSTER) was used with meteorological data from sites in the northeast, northwest, and the southeast for the cases where terrain is below the physical stack height. The meteorological data was selected to be representative of sites where pulp mills would be located. At longer downwind distances for such cases, the maximum concentrations predicted by the Single Source Model were for very stable and/or calm wind situations. Since plume travel time is not accounted for in the model, these concentrations are not realistic and should not be used for the Class I intrusion analysis. The conditions used in deriving Figure 3 are considered much more realistic for longer downwind distance calculations.

EPA's Valley Model, which uses assumed worst case meteorological conditions (E stability;  $u=2.5$  mps), was used for cases where the plume impinges on elevator terrain (135 meters higher than the stack for a 1000 ton per day mill).

For the case where terrain features are above the physical stack height but less than the height where plume impingement was assumed (135 meters higher than the stack for the 1000 tpd mill) a different modeling approach was used.

A PTMAX run was made with terrain exceeding the stack by 150 feet to see which meteorological conditions resulted in the highest concentrations, the re-

sults which, are based on the stack parameters for the 1000 tpd mill, were as follows:

TABLE 1.—PLUME IMPINGEMENT: CONCENTRATIONS AS A FUNCTION OF METEOROLOGICAL CONDITIONS

Stability	Wind speed m/sec.	24-hr con- centration <sup>1</sup>	Distance to maximum kilometer
C.....	15	26	0.35
D.....	20	<sup>2</sup> 106	.23
E.....	5	12	2.6
F.....	5	21	2.9

<sup>1</sup> Concentrations based on normalized emission rate of 100 pounds per hour.

<sup>2</sup> Plume centerline exceeds terrain by less than 14 meters.

TABLE 2.—*Paramameters for diffusion modeling of example Kraft Pulp Mills*

Capacity, t/d ADP.....	1, 000
Exit Gas Temperature, °F (430° K).....	315
Flue gas flow rate (ft <sup>3</sup> /sec): <sup>1</sup>	
Recovery boiler.....	$5.78 \times 10^3$
Lime kiln.....	$.69 \times 10^3$
Smelt tank vent.....	$.64 \times 10^3$
Power boiler <sup>2</sup> .....	$3.57 \times 10^3$
Total.....	$10.68 \times 10^3$
Stack height (feet).....	300

<sup>1</sup> For 400 t/d mill, flow rate assumed to be 40 percent of 1,000 t/d mill.

<sup>2</sup> Heat input capacity  $966 \times 10^6$  Btu/hr.

Using the D stability, 20 mps run as the worst-case situation, concentrations were plotted as a function of distance (Figure 1). For comparison purposes, the concentrations for plume impingement are also shown (upper lines in Figure 1). The maximum concentrations for C and D stability in the table above and in Figure 1 are overestimates, since under unstable and neutral conditions, the plume is normally assumed to follow the terrain (see Figure 2). Thus, there was little point in examining cases where stack height exceeded terrain by more than 150 feet for the C and D stability cases.

The stack parameters used in the diffusion modeling are summarized in Table 2. A normalized emission rate of 100 lb/hr was used in most of the model runs, so that the predicted concentrations must be adjusted, as described below, to be consistent with the specific new mills being considered. To simplify the modeling, all emissions were assumed to be released through single stack. Annual averages were not calculated, since the short term increments are expected to be controlling.

Separate model runs were not made for the case where a scrubber is used to control the power boiler emissions, since there is little difference in the stack parameters for the scrubber and non-scrubber cases. Due to the reheating effect of the recovery furnace flue gas, the final stack gas temperature when a scrubber is used is approximately 280°F, as compared to 350°F for the non-scrubber case. An average of these two temperatures was used in the modeling.

#### Emissions

Table 3 lists the emissions for a 1000 tpd mill for various fuel and power generation conditions. BACT for sulfur dioxide from the recovery furnace is assumed to be 30 ppm (1.6 lbs per ton or 67 lbs per hour). Emissions for the coal and oil combustion cases were calculated directly from existing or tentative NSPS for Kraft mills and steam generators, except that for particulate matter from oil combustion, the AP-42 uncontrolled emission factor was used. Where bark is being burned, the numbers on page B-2 of ERT's report on Kraft mills were used as a basis, but were adjusted to account for lower sulfur dioxide emission from the recovery furnace and lower particulate emissions from oil combustion, in accordance with the assumptions discussed above.

## Results and use of data

The highest concentrations predicted with the Single Source CRSTER Model (Tables 4 and 5) adjusted for the highest emission rate in Table 2 (1127 lb SO<sub>2</sub> per hour), were 48 ug/m<sup>3</sup>, 24 hour average; and 130 ug/m<sup>3</sup>, 3 hour average. Thus, when terrain does not exceed the physical stack height, the House and Senate Class II increments would both permit mills in excess of 2000 tpd. In this terrain situation, the 1000 ton per day for the highest emission rate would not exceed the Class I increment in an adjacent area if it were located more than 15 km under the Senate proposal or 9 km under the House proposal.

TABLE 3.—EMISSION CALCULATIONS  
11,000 tpd ADP]

	Emission rate (pounds per hour)	
	SO <sub>2</sub>	Particulates
Onsite power generation (966×10 <sup>6</sup> Btu/hr):		
Coal (1.2 lb SO <sub>2</sub> /10 <sup>6</sup> Btu).....	1,127	235
Oil (0.8 lb SO <sub>2</sub> /10 <sup>6</sup> Btu).....	840	189
Coal and bark.....	947	266
Oil and bark.....	725	220
Coal plus FGD (0.32 lb SO <sub>2</sub> /10 <sup>6</sup> Btu).....	451	235
Low sulfur oil (0.3 lb SO <sub>2</sub> /10 <sup>6</sup> Btu).....	451	189
Purchased power (777×10 <sup>6</sup> Btu/hr):		
Coal.....	1,000	216
Oil.....	688	180
Coal and bark.....	820	247
Oil and bark.....	570	211
Coal plus FGD.....	375	216

Note: For different size mills, emissions may be adjusted in direct proportion to size, i.e., 500 tpd mill emissions are 50 percent of above figures.

Where the plume impinges on elevated terrain (Figure 4), a 1000 tpd mill would violate the Senate Class II increments out to 5 km (24 hour increment is controlling) and the House Class increment out to 6 km (3 hour increment is controlling) while the Senate Class I increments would be exceeded out to 45 km (24 hour increment is controlling) and the House Class I would be exceeded out to 32 km (3 hour increment is controlling). The plume impingement curves of Figure 4 are valid when the terrain exceeds the stack height by 135 meters for the 1000 tpd mill or 100 meters for the 400 tpd mill (based on plume rise under E stability,  $u=2.5$  mps). Since E stability with constant direction winds was assumed to persist for no more than 12 hours, the curves of Figure 1 are not valid beyond 81 km for 3 hours average (9 hours of travel time/plus 3 hours of impingement) or 54 km for 24 hours average (6 hours of travel time plus 6 hours of impingement).

The following screening procedure was used to determine whether an individual mill would be restricted by either the Class II or III (House) increments or an adjacent Class I area.

1. Use the runs that correspond most closely to the individual mill (i.e., size and area of the country).

2. Using topographical maps, find the minimum emission height (stack height minus maximum terrain height) at various downward distances.

3. For each downward distance, find the normalized concentration from the appropriate figure or table, as follows:

- A. Terrain up to the height of the stack.

Tables 4 and 5 contain results that should be used for non-impingement cases for determining maximum concentrations (Class II analysis only). For Class I intrusion analyses and the interaction of two sources at distances greater than the location of the maximum concentration, Figure 3 should be used.

- B. Terrain between 0+135 meters higher than top of stack.

Figure 1 curve c should be used.

- C. Plume impingement (terrain greater than 135 meters above top stack).

Figure 4 should be used out to the limits discussed above. For greater distances, Figure 3 should be used.

4. Adjust normalized concentration according to the ratio of the actual emissions, [i.e.,  $X_i = X_a (Q_i/Q_n)$ ], where the subscript i denotes the individual mill,

$n$  denotes the normalized mill,  $X$  is concentration, and  $Q$  is emission rate in consistent units for both  $i$  and  $n$ .

5. Compare resulting concentrations with Senate and House increments applicable at each downwind distance. Where interaction of two sources is being examined, consider only terrain that is colinear with the two sources, adding concentrations at appropriate downwind distances.

TABLE 4.—PREDICTED CONCENTRATIONS ( $\mu\text{g}/\text{m}^3$ ) FOR 1,000 TPD KRAFT PULP MILL (CRSTER RUNS)  $Q=100$  lb/hr

Height of stack above terrain	Downwind distance (kilometers)									
	1.0		2.5		5.0		10.0		20.0	
	24-hr maximum	3-hr maximum	24-hr maximum	3-hr maximum	24-hr maximum	3-hr maximum	24-hr maximum	3-hr maximum	24-hr maximum	3-hr maximum
Northeast location: <sup>1</sup>										
0	1.7	11.5	3.0	9.1	2.4	8.0	1.9	8.4	1.2	8.0
100	.9	5.4	1.5	6.0	1.6	4.2	1.2	4.3	.8	4.2
300	.3	2.8	.7	3.8	.6	2.9	.5	2.2	.4	1.4
500	.3	2.4	.4	2.7	.4	2.6	.3	2.1	.2	1.1
Southeast location: <sup>2</sup>										
0	1.6	6.2	2.9	8.8	2.7	8.2	1.8	9.2	1.4	8.3
100	1.0	5.8	1.6	6.5	1.9	4.2	1.2	3.6	.8	4.0
300	.9	5.0	1.1	5.8	.7	3.8	.7	2.5	.4	1.7
500	.8	4.3	1.0	5.4	.7	3.6	.4	2.1	.3	1.5
Northwest location: <sup>3</sup>										
0	2.1	9.2	4.3	9.7	3.4	7.3	2.2	6.6	1.1	6.6
100	.9	5.7	2.3	5.6	2.4	4.2	1.6	3.3	.9	3.8
300	.7	5.4	.9	3.8	.9	2.9	1.0	1.8	.7	1.2
500	.6	4.5	.6	3.4	.5	2.6	.4	1.7	.4	1.1

<sup>1</sup> Concord, N.H., surface data; Albany, N.Y., upper air data.

<sup>2</sup> Huntsville, Ala., surface data; Montgomery, Ala., upper air data.

<sup>3</sup> Portland, Oreg., surface data; Salem, Oreg., upper air data.

TABLE 5.—PREDICTED CONCENTRATIONS ( $\mu\text{g}/\text{m}^3$ ) FOR 400 TPD KRAFT PULP MILL (CRSTER RUNS)  $Q=100$  lb/hr

Height of stack above terrain	Downwind distance (kilometers)									
	1.0		2.5		5.0		10.0		20.0	
	24-hr maximum	3-hr maximum	24-hr maximum	3-hr maximum	24-hr maximum	3-hr maximum	24-hr maximum	3-hr maximum	24-hr maximum	3-hr maximum
North Northeast location: <sup>1</sup>										
0	11.2	36.9	7.9	20.1	5.3	20.6	3.4	22.2	2.3	17.6
100	2.7	15.6	4.3	11.0	2.9	7.8	1.9	8.9	1.3	9.0
300	.8	6.7	1.3	7.9	1.1	5.7	1.0	4.3	.7	2.4
500	.8	6.3	.9	6.0	.9	5.3	.8	4.0	.5	2.3
Southeast location: <sup>2</sup>										
0	11.3	34.6	9.6	20.2	5.2	23.0	3.9	22.6	2.5	16.1
100	2.9	13.9	5.1	11.1	3.6	8.9	2.0	8.0	1.2	7.5
300	1.8	12.2	1.5	7.1	1.4	5.5	1.0	3.1	.7	2.6
500	1.5	11.4	1.3	6.8	1.2	5.2	.8	2.8	.4	1.7
Northwest location: <sup>3</sup>										
0	16.5	39.1	11.9	20.2	6.8	17.1	3.2	17.5	2.6	15.8
100	3.7	14.3	8.2	13.5	5.3	8.7	2.7	8.0	1.4	7.1
300	1.3	0.3	1.5	8.2	1.6	5.0	1.2	4.6	.7	2.5
500	1.1	8.5	1.1	7.5	.9	4.4	.9	4.2	.6	2.4

<sup>1</sup> Concord, N.H., surface data; Albany, N.Y., upper air data.

<sup>2</sup> Huntsville, Ala., surface data; Montgomery, Ala., upper air data.

<sup>3</sup> Portland, Oreg., surface data; Salem, Oreg., upper air data.

## THE CLEAN AIR ACT AMENDMENTS AND THE BUILDING AND CONSTRUCTION TRADES, AFL-CIO

Mr. Moss. A letter I recently received from the AFL-CIO Building and Construction Trades Department provides additional rationale for adopting my amendments to the Public Works Committee bill. My

amendments call for 1 additional year of study of the economic implications of implementing the proposed policy of nondeterioration. Professional groups, industry representatives and representatives of organized labor have all told us that the committee's version of the bill is unacceptable to the present economic situation facing this country.

AMERICAN FEDERATION OF LABOR—CONGRESS OF  
INDUSTRIAL ORGANIZATIONS,  
Washington, D.C., June 11, 1976.

HON. FRANK E. MOSS,  
U.S. Senate,  
Washington, D.C.

DEAR SENATOR: The Senate will soon begin consideration of the Clean Air Act Amendments of 1976, a series of provisions which has had a controversial journey through both Senate and House committees. Amongst these various amendments, one provision more than any other has been the center of argument and discussion, Section 6, commonly referred to as the Non-Deterioration Section.

The impetus for this legislative language arises from a 1972 court case which instructed EPA to take stronger measures to protect areas cleaner than existing air pollution standards. Section 6 is an attempt to write into law a revised version of EPA's court-mandated regulations.

Although the controversy has at one time or another been focused on the original court decision, the need for more stringent pollution controls, health hazards, and a host of other issues, it ultimately has concerned the impact such a provision will have on industry employment and the economy.

It is our conclusion from reading the various reports and findings both of industry and government that it is by no means clear what the final impact of this legislation will be. The often emotion-laden arguments from both sides have only served to obscure the need for hard objective analysis.

We have therefore decided to support the Moss amendment which will delay implementation of Section 6 for one year in order to allow time for further and hopefully objective study of this matter. We realize the arguments of many that this is a stalling tactic designed to kill significant deterioration. We are also aware of the continued uncertainty such a study will create for those in industry making investment decisions. However, it is our firm belief that the issue and its consequences are far too important to be brushed aside in the haste to legislate. We are far better off with a temporary delay than a permanent disaster.

On behalf of the Building and Construction Trades Department, AFL-CIO, its 17 affiliated unions and their four million members, I therefore wish to urge your support of the Moss amendment.

Sincerely,

ROBERT A. GEORGINE, *President.*

Mr. Moss. The Clear Air Act Amendments reported out by the Public Works Committee in S. 3219 are scheduled for floor action. I believe the 22 and 23 of July. Section 16 of S. 3219 deals with the protection of the stratospheric ozone layer and it does so in what I consider an appropriate and proper manner. [Secs. 150-159]

This section of the bill deals with the chlorofluorocarbon issue, and more specifically, with the issue of chlorofluorocarbons being released into the atmosphere from aerosol spray containers, refrigeration, air-conditioning, and from other sources. The release of these chemicals into the atmosphere has been one of considerable concern among our Nation's scientists, the public, and the news media. The concern exists because of a hypothesis that the released chlorofluorocarbons cause a reduction of stratospheric ozone. The ozone in the stratosphere is a trace gas present at less than eight parts per million. However, this ozone shields the Earth's surface from some of the sun's ultraviolet rays which are inimical to life. Therefore, if the hypothesis is correct, the fluorocarbons released into the atmosphere are injurious to the health

and welfare of the world's people. The underlying cause of this concern is the chlorine atoms in the chlorofluorocarbons.

The Committee on Aeronautical and Space Sciences first began an inquiry into the effects of chlorine on the upper atmosphere early in 1974 as part of its review of the environmental aspects of the space shuttle. Later in 1974 I ordered the committee staff to look specifically into the effects of the chlorofluorocarbons on the upper atmosphere and held a hearing on this matter in January 1975. We worked on this problem during the spring of 1975 and, in fact recommended to the Senate that NASA be given additional authority for carrying out a research, technology, and monitoring program of the upper atmosphere with initial emphasis on the stratosphere. This amendment to the fiscal year 1976 NASA authorization act was accepted by the Congress and is currently the law of the land.

Since that time, I have appointed a Subcommittee on the Upper Atmosphere, which is chaired by the Senator from Arkansas (Mr. Bumpers) with the ranking minority member, the Senator from New Mexico (Mr. Domenici). This subcommittee has conducted extensive hearings into this matter.

The chlorofluorocarbons are extraordinarily useful chemicals. In fact, our entire refrigeration and air-conditioning industries are dependent upon them. This means that, in turn, our food processing, building, and many other industries are dependent upon the chlorofluorocarbons. Many of the things we take for granted are possible only because man has invented these chemicals.

The chlorofluorocarbons are so extremely useful, because of their unique physical properties and because they are chemically and biologically inert and nontoxic. The concern about some of the chlorofluorocarbon chemicals is that because of their extreme chemical inertness, they remain in the atmosphere for a very long period of time, therefore, becoming thoroughly mixed worldwide in the atmosphere, slowly diffusing upward and eventually entering the stratosphere. This mixing and diffusion process carrying the chlorofluorocarbon molecules into the stratosphere, according to the theory, takes at least 10 years.

The stratosphere is a region of the upper atmosphere above our weather. It is a region where the temperature remains essentially constant or increases with altitude. It begins anywhere from 5 to 11 miles above the Earth's surface, depending on latitude and time of year, and extends up to about 30 miles.

On reaching the upper part of the stratosphere, chlorofluorocarbon molecules are acted upon by ultraviolet radiation which splits the molecule apart, releasing a chlorine atom that quickly reacts with a molecule of stratospheric ozone to form chlorine oxide. The chlorine oxide reacts with other trace constituents in the atmosphere and the chlorine atom is again released. So, according to the theory, the reaction is cyclical until the chlorine atom eventually collides with a hydrogen atom to form a molecule of hydrogen chloride which might diffuse downward and be washed out of the lower atmosphere by rain. That is the hypothesis which scientists are striving now to determine whether it is correct or incorrect.

The hearing records of the committee and the subcommittee make it clear that what is needed is a properly coordinated and funded research

effort aimed at developing the much-needed information on the numerous processes and reactions that occur in the upper atmosphere, and that there should be a clearly defined jurisdiction within the executive branch of the Government to handle the regulatory aspects of this matter. Section 16 of the bill as reported by the Public Works Committee does exactly that. The bill strengthens the research, technology, and monitoring effort needed—in fact it builds on earlier legislation recommended by the Committee on Aeronautical and Space Sciences. The legislation reported by that committee provides that the Administrator of the Environmental Protection Agency must issue regulations by January 1, 1978, if he finds that chlorofluorocarbons, or as the bill calls them, halocarbon emissions, from aerosol containers may reasonably be anticipated to cause or contribute to the endangerment of the public health or welfare in any way.

These recommendations of the Public Works Committee are in full conformity with the recommendations of the Federal Task Force on the Inadvertent Modification of the Stratosphere, more popularly known as the IMOS Task Force. The IMOS report of June 1975 recommends that the scientific data needed to guide the regulatory agencies be provided by January 1, 1978, and that is being provided for. In fact, NASA, the lead agency on this matter, is committed to providing the best available information in a report to the regulatory agencies and Congress by September 1977.

I do not want to mislead my colleagues in the Senate. The scientific questions surrounding this matter are not getting any simpler. In fact, I think if anything, the hypothesis is more cloudy than it was 6 months ago. But the scientific community is doing the best it knows how to get the information needed and the available information will be reported in the report due September 1977. But that will not be the final word. The research program will have to continue, I am sure, after that period.

However, the bill recommended by the Public Works Committee adheres to the recommended IMOS time table and further strengthens the research and monitoring effort. In fact, the bill reported by the Public Works Committee places additional responsibility on a number of Federal agencies and the National Academy of Sciences and places specific responsibility for the regulatory aspects in the Administrator of the Environmental Protection Agency.

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## THE QUESTION OF SUFFICIENT STUDY OF THE NONDEGRADATION ISSUE

Mr. Moss. I ask that my further comments on Mr. Muskie's nondegradation fact-sheet be printed in the Record. I am offering this additional information to put to rest the debate over whether sufficient studies of the economic implications of nondeterioration have been made.

### FURTHER COMMENTS OF SENATOR MOSS ON "NONDEGRADATION FACTSHEET"

(Congressional Record, May 26, 1976, pages S7994-7998)

The Senate will soon consider S. 3219, the Clean Air Act Amendments of 1976. Without question, the most important provision of S. 3219 is Section 6, the non-deterioration proposal, which if adopted, will set the course of future national

growth policy of this country and its 215 million citizens. Without question, this is also the most controversial provision of S. 3219. In its present form as administrative regulation of the Environmental Protection Agency, the policy of non-deterioration is being challenged in the courts as too extreme on the one hand, and not stringent enough on the other hand. In this climate of uncertainty, the Clean Air Act of 1970 has come up for amendment. Since present law leaves unclear Congressional intent on a national nondegradation policy, it is up to Congress to make this determination.

The amendment offered by the Senate Public Works Committee goes considerably beyond existing law. It is my concern that this amendment may not present a balanced approach between national priorities on environmental protection and necessary future economic development. It is my further concern that this Body does not have the necessary facts and inputs to make such a decision of lasting importance to the nation. For this reason, I introduced an amendment, which shares the bipartisan cosponsorship of 19 Members, which calls for a comprehensive study of the full ramifications of this proposal on our environmental goals, energy self-sufficiency, economic recovery, consumer costs and State and local planning initiatives.

This study would be conducted by a National Commission on Air Quality, which created under these amendments, which would enable a resolution of all the fragmented and divergent analyses that have been conducted on a "crash basis" over the past months in reaction to the Committee proposal. Surely there is no national emergency that dictates an instant decision by the Congress. Nondegradation relates to esthetic values, not life or death decisions on our people's health and welfare. The present law wisely provides this protection. Moreover, the present EPA regulations would remain in force until this study is completed.

Surely this body, if it is to act judiciously and wisely in the public interest, is entitled to all the facts. But it has been argued that there is no need to consider my amendment and that reasoned delay, as I propose, is totally unnecessary. It has been stated that all the facts are known and that this issue has already been "studied to death." It has been stated that the legislative proposal before us has been developed only after extensive legislative hearings, that the Committee has received comments from virtually all interest groups affected and has worked closely with State and local government officials.

I wish to draw my colleagues' attention to certain "facts" and "allegations" contained in the May 26 Congressional Record to set the record straight that this Body does not have all the necessary facts and inputs to make a decision that will place an indelible stamp on the lives and livelihood of all Americans. And of equal importance, to set the record straight that there is not the general consensus of support for this provision as implied.

#### ALLEGATION

Extensive legislative hearings were held on the nondegradation proposal contained in S3219. To quote from the May 26 Congressional Record. "In 1975, 14 days of hearings were held . . . One entire day of hearings was focused completely on nondegradation in 1975, and the subject was discussed in numerous other hearings that year."

#### FACT

Comprehensive legislative hearings were not held on the issue of nondegradation. No hearings were held on the language contained in Section 6 of S3219. The nondegradation amendment was drafted and revised during Subcommittee and Committee markups, and the final version bears little resemblance to any proposal on which testimony was received.

Going to the official four-volume documentation of the Committee hearings record, contained in 1895 pages of recorded testimony and submission for the record, it is accurate that the Subcommittee did conduct 14 days of hearings on provisions of the Clean Air Act. However, only one day was "focused completely on nondegradation," and this "entire day," as cited in the May 26 Congressional Record lasted a total of only three hours. (The Subcommittee convened at 10:00 a.m. on April 23, 1975, and recessed at 1:00 p.m.) Moreover, only four witnesses were heard—two in support of a national nondegradation policy, one with mixed views and one witness opposed. The witness list for this single session included:

Mr. Richard M. Lahn, Washington Representative of the Sierra Club, accompanied by Mr. Bruce Terris.

Mr. Cubia Clayton, Director, Air Quality Section, New Mexico Environmental Improvement Agency.

Mr. J. D. Geist, Executive Vice President, New Mexico Public Service Co.

Mr. C. Howard Hardesty, President, Eastern Hemisphere Petroleum Division, Continental Oil Co., representing the American-Petroleum Institute.

Other than this "one entire day" of specific hearings on nondegradation, the subject was not discussed "in numerous other hearings," as cited in the May 26 Congressional Record. Again, going to the official Committee record, no other witnesses devoted full testimony to the subject of nondegradation.

Only eight witnesses out of 64 who appeared before the Subcommittee made any reference to nondegradation—and this was only in passing as part of their overall testimony on other provisions of the present law. Such comment was only in general terms and is contained in relatively few sentences in the hearing record. These comments sparked *only three questions* by the Subcommittee.

Following are the dates and appearances of witnesses:

March 19, 1975: Environmental Protection Agency—Administrator Russell Train briefly referenced nondegradation in the closing three paragraphs of his prepared statement; there was no discussion throughout the 123 pages of the hearing transcript.

March 20, 1975: Federal Energy Administration—Administrator Frank Zarb included nondegradation in prepared testimony on the Administration position on Clean Air Act Amendments. The statement was not read and there was no discussion of nondegradation in the entire 417 page transcript.

April 21, 1975: National League of Cities—Mr. Walter Rockenstein commented that without a national nondegradation policy, industry would leave the cities and relocate in rural areas. When questioned that his statement "almost sounded selfish," the witness replied that in part he was misunderstood, but "Obviously we don't care to lose the industries which provide jobs for our people." It may be noted that this question to the witness came after 707 pages of transcript in the Committee Record wherein the Senator posing it commented, "For the first time I heard someone talk about nondegradation."

April 22, 1975: Iron and Steel Institute—Mr. David M. Anderson, Environmental Quality Control, Bethlehem Steel (who also serves on the Environmental Protection Agency Air Quality Criteria Advisory Committee) observed that the steel industry will require construction of approximately 30 million additional tons of steel capacity but it may be necessary to import this with resultant loss of jobs for American workers as a result of overly stringent air quality standards. The steel industry would have to commit an additional \$4.2 billion, over and above the \$1.1 billion already spent and that the industry cannot finance such pollution control costs while at the same time expanding steel capacity to meet domestic needs. He advised that other major industries would face the same problem.

April 24, 1975: Mr. Lane Kirkpatrick, Director, Air Pollution Control Division, Colorado Department of Health touched on the concept of nondegradation in one paragraph of his prepared statement. He suggested that perhaps certain pristine areas such as national parks should be preserved from growth but other areas could be used for growth or to boost a state's economy based on the desires of the general public. There was no questioning and none of the other nine witnesses, including state officials from Texas and New York, made any comment on nondegradation. The hearing related to land-use controls and transportation controls.

April 29, 1975: Mr. Benjamin Wake, Montana Department of Health and Environmental Sciences structured his statement to the hearing subject of Intermittent Control Systems, but in response to one committee question, advised that there is a need for a standard more stringent than primary and secondary. His view on ICS is that it will "make air uniformly dirty" and that "a tricky plant manager could quickly learn when to release great volumes of pollutants."

May 1, 1975: Pacific Power & Light Company—Mr. George D. Rives, Counsel, advised the Subcommittee that he would support elimination of the nondegradation requirement from Federal law.

May 1, 1975: American Steel Institute—Mr. Fred Tucker advised that no other nation has regulations or limits based on significant deterioration and if domestic steel needs are to be met, we will have to import foreign produced steel.

Mr. Tucker also advised that because of the steel industry problems of compliance in maintenance areas it may be necessary to construct a new "grass roots" complex in a Class II area where air quality is above standards. But the Committee proposal would not allow this. The Senate Public Works Committee staff summary of nondegradation states in the April 1 Congressional Record,

"Class II, as defined by EPA regulations and the Senate proposal, typically permits the individual siting of a 1000 megawatt coal-fired powerplant and any one of a major new grass roots steel complex—none of which are planned." In correspondence to the Committee, also referenced in the April 1 Congressional Record, EPA Assistant Administrator for Air and Waste Management, Roger Strelow, makes the same comment.

#### ALLEGATION

States have been adequately involved in developing these amendments.

"Twenty states joined the Sierra Club or submitted independent suits requesting the courts to require a nondegradation policy.

"Eight states testified in 1975 during the Clean Air hearings. All submitted comments on nondegradation. It was on the basis of the suggestions made in such meetings and statements from these witnesses that caused the Committee to make substantial changes in the legislative proposal regarding nondegradation."

The National Governors' Conference supports the Committee bill and "opposes the Moss Amendment."

#### FACT (20 STATES)

Twenty states did join the Sierra Club in its suit for a national nondegradation policy. But why?

According to testimony of the Sierra Club in the nondegradation hearing April 23, Mr. Richard Lahn advised the Subcommittee that a paramount reason 19 states joined the Sierra Club brief was to prevent industry from "fleeing" to rural areas.

To quote from Mr. Lahn, "Aside from the environmental aspects described, perhaps the most important reason for preventing significant deterioration of air quality in clean air regions is the possible impact the lack of this provision might have on the economic well-being of our already industrialized, urban centers. The incentives to develop in rural areas, draining the industrial development in urban areas was a major concern of the 19 states which filed friend of the court briefs before the Supreme Court.

"The brief filed by 16 of the states makes the point well: "The health of the economies of urban-industrial regions is dependent upon industrial continuation and growth. It is in the best economic interest of these regions that sources remain in them and utilize the emission controls necessary to reduce pollution levels to the numerical limits of the standards.

"Thus, it is beneficial to those regions that the requirement of no significant deterioration prevents rural regions from allowing lenient emission controls that are so much less expensive that an industry will have a financial incentive to relocate in a rural region . . .

"The requirement of no significant deterioration removes the possibility of economic coercion between competing regions based on the stringency of emission control requirements.'"

#### FACT

In short, industrialized areas of the country were fearful that industry would migrate to rural areas and therefore supported the concept of nondegradation in order to hold industry "hostage." This same concern was expressed by the National League of Cities in testimony April 21—the only comment made on nondegradation in that hearing.

But this represents another misconception of the highly complex issue of the nondegradation proposal and the present law itself. This phenomenon simply would not happen because of the "new source performance standards" (NSPS) required by the law. The present law carefully plans for the control of pollution that might result from industrial growth in new areas. Any new industry must meet the most stringent pollution reduction emissions possible to attain primary and secondary air quality standards. If they do not, they would not be granted permits.

Section 111 of the law requires the Administrator of EPA to establish performance standards applicable to new or modified stationary sources that may contribute significantly to air pollution. Such standards, known as "new source performance standards" (NSPS), require the "best system of emission reduction available" and are applicable even in those areas of the nation where the ambient air quality is better than that required under the national primary and secondary standards.

Nine of the 19 states which originally joined the Sierra Club suit, have now expressed strong concern or opposition to enactment of a national nondegradation policy. Of the 19 states that joined the suit—Alabama, California, Connecticut, Florida, Illinois, Kansas, Louisiana, Maine, Massachusetts, Michigan, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, South Dakota, Vermont and Texas—the nine states that have advised of their grave concerns with the impact of such policy are: Alabama, Florida, Kansas, Louisiana, Maine, Michigan, Ohio, North Carolina and Texas. Their comments, together with those of other State Governors follow:

#### GOVERNORS COMMENTS ON PROPOSED NONDEGRADATION LEGISLATION

Alabama—Honorable George C. Wallace—

"... the way nondegradation is defined can have a significant effect on growth plans and employment in our State. I urge you to oppose any specific definition of nondegradation. (Proposals) will concentrate development more heavily in already impacted areas and completely shut off further development in the relatively underdeveloped areas. The several states are in a better position than Congress to define areas needing specific controls." (2/12/76)

Arizona—Honorable Raul H. Castro—

"Consequently, the economic development of this State could be unduly determined at the Federal level. It is essential that State rights are preserved and that opportunities to participate in the decisionmaking process are provided to local governments particularly when standards to protect human health and welfare are not exceeded. I urge Congress to establish a study commission to investigate and analyze the implications and consequences of the non-deterioration provisions as promulgated and proposed and to consider the alternative approach outlined by my staff in the enclosed report." (2/18/76)

Florida—Honorable Rubin O. D. Askew—

"One resource which is vital to Florida is the quality of air and the tourism which depends on it. Florida's air quality is for the most part better than secondary air quality standards. Florida has enacted a rule to prevent significant deterioration and the Florida Environmental Regulation Commission has resolved to continue the protection of areas with air quality better than the primary and secondary standards. I strongly urge you to carefully consider the consequences of adopting (nondegradation) and empowering the federal Environmental Protection Agency (EPA) to preempt the states' prerogatives in these areas. It is our position that the States are more capable of evaluating the economic and social implications of desired air quality within their boundaries than EPA." (2/11/76)

Georgia—Honorable George Busbee—

"I have previously taken a strong public position against the provisions . . . and I shall continue to speak out against them where possible. I have advised our Congressional delegation of our position with respect to proposed amendments to the Clean Air Act." (3/16/76)

Kansas—Honorable Robert F. Bennett—

"We share your concern that the proposal, as well as the existing federal involvement in the issue seriously erodes the state's authority to make the decisions necessary to strike a reasonable balance between environmental, economic, energy and social needs." (3/24/76)

Louisiana—Honorable Edwin Edwards—

"The Air Control Commission has requested that every effort be made to remove the offensive 'Significant Deterioration' provisions from the bill since each State already has the right to choose small increments of deterioration in favor of economic and social gain for its populace and the proposed law effectively curtails that prerogative. Defeat of the entire bill may be in the best interest of the state if the offensive 'Significant Deterioration' provisions cannot be satisfactorily resolved." (4/20/76)

Maine—Honorable James B. Longley—

"I share your concern over the possibility of further encroachment by the Federal government on the rights and destinies of Maine citizens and I concur with you that decisions affecting the local communities of Maine and other states should, whenever possible, be made at the local level. The State of Maine through our State Legislature and our Department of Environmental Protection has enacted some of the most sound and comprehensive environmental laws and regulations to be found anywhere in the entire nation. However, these laws and regulations are not so stringent as to preclude economic development. The people of Maine are justifiably proud of their State and its environment, but they are also

very much concerned about the present economic picture in which there are not enough jobs for the people who want to work." (2/25/76)

In letters to members of the Michigan Congressional delegation: "The amendments pending in Congress could lead to a federally mandated land-use program based on air quality. I have consistently maintained that land-use planning should be performed at the local level, and the legislation I have supported in Lansing (HB 4234) requires that planning be done at the local level. It is inappropriate to base a land-use program on air quality. The quality of the earth—not the quality of the air—is the only appropriate and sound basis for land use decisions." (4/29/76)

Mississippi—Honorable Cliff Finch—

"If pending amendments to the Clean Air Act are passed, it will virtually halt economic development in our state. I am a firm advocate of the stated objectives of the Clean Air Act; that is, that the State takes action to protect the health and welfare of its citizens through the adoption and enforcement of the National Ambient Primary and Secondary Standards. Court rulings and EPA regulations that go beyond the attainment of the National Ambient Primary and Secondary Standards should be overturned. The proponents seem to be anxious to get these provisions set in concrete in the law before the present court rules on this matter again." (3/17/76)

New Hampshire—Honorable Meldrim Thomson—

"Resulting zero growth and adoption of a National Land Use law by this indirection would ruin the economy of small states such as New Hampshire as well as create an economic vacuum in enormous areas of the larger states. The punitive results of this amendment will fall upon our most needy citizens first and most heavily. Is there no end to these attempts by the Congress to hoist this country on its own petard?" (2/18/76)

North Carolina—Honorable James E. Hoishouser, Jr.—

"North Carolina is well aware of the provisions of both the House and Senate versions of amendments, and we have actively opposed and intend to continue to oppose the enactment of either of these amendments in the Law." (3/31/76)

Ohio—Honorable James A. Rhodes—

"The Governor has asked me to inform you that the Ohio Environmental Protection Agency has strongly opposed the nondegradation aspects of the U.S. Environmental Protection program. It is our opinion that such standards as are proposed by the subject amendment represent overreaching by EPA and would have a serious effect upon land use in our state. The Governor appreciates receiving your comments regarding this very important matter. Thomas J. Moyer, Executive Assistant to the Governor (3/12/76).

Oklahoma—Honorable David L. Boren—"Thank you for your letter concerning the Clean Air Act. I have already expressed my opposition to various Congressmen. I feel that environmental protection should be left at the state level, and I will continue to oppose federal regulations in this area." (3/19/76)

South Carolina—Honorable James B. Edwards—"We are asking the members of the South Carolina delegation in Washington to oppose the proposed amendments to the Clean Air Act of 1970." (3/19/76)

Tennessee—Honorable Ray Blanton—"The concern is that these amendments, if adopted, may infringe upon our state's authority and inhibit industrial expansion. I would appreciate your attention for your consideration and appropriate action you may be able to do to protect the rights of the State of Tennessee." (3/12/76)

Texas—Honorable Dolph Brisco—"I urge your support for any provisions that will accomplish the principles stated in the resolution" . . . adopted by the Inter-agency Council on Natural Resources and the Environment. The significant deterioration proposals would restrict growth in areas where the standards are not exceeded. In these clean areas where public health is not threatened, such arbitrary limitations on growth simply are not acceptable to the majority of the citizens of Texas. Any decisions affecting growth must take into account the wishes of the people in the affected areas and must include a broad spectrum of considerations. Growth determinations must not be based solely on air quality as now perceived by the federal government. . . . The provisions of the amendments proposed by the Senate and the House infringe upon the right of the states and the citizens to determine growth rates and patterns according to local needs and goals. The proposed increments are arbitrary and far too restrictive. These increments will allow the Administrator of EPA to exercise undue control over land use throughout the country." (Undated)

Utah—Honorable Calvin L. Rampton—"While there is much to be regretted in the bill from a technical and practical standpoint, I find that the legislation is even more offensive administratively. The state is the ostensible administrator for the program, but in reality the states' role is purely ministerial. The air quality standards to be enforced are federally imposed, the land area to be included in each class are specified, and the limited discretion left to the state to redesignate can only occur after certain conditions are met. This bill is an example of good intentions run riot and what results from the lack of a coherent national energy policy. In the interest of environmental protection it imposes a no-growth policy on Utah without any regard for the long-term national interest." (3/11/76)

Virginia—Honorable Mills E. Godwin, Jr.—

"If this legislation is enacted in its present form, Virginia would feel impelled to ask the courts to set it aside as unconstitutional. The National Governors' Conference adopted a resolution in September, 1975, which recommended that each State retain the flexibility to determine for itself what is "significant deterioration" consistent with local values. The Southern Governor's Conference also in September, 1975, expressed serious concern that "significant deterioration" provisions might arbitrarily prohibit economic development of many areas, even though the air quality would be much better than the level required for good health. The organization of State and Territorial Air Pollution Program Administrators also recommended, through resolution, that the Clean Air Act be amended to expressly provide that there shall be no requirement to establish air quality standards more stringent than the primary and secondary standards.

"At the very least, the Committee should refer the non-deterioration provisions to a study commission for a thorough analysis of their implications, to be followed by public hearings where the full impact of any resulting recommendations may be focused on by State and local government representatives and concerned citizens." (1/15/76)

#### FACT (EIGHT-STATE TESTIMONY)

Eight states did not testify on nondegradation as cited in the May 26 Congressional Record. Only one state, New Mexico, presented testimony during the session devoted to this issue. Of the remaining seven, Nebraska, Texas, Colorado, New York, California, Montana and West Virginia, only two officials—from Colorado and Montana—made passing reference to this issue in the course of their testimony. The officials from these states appeared before the Subcommittee to review such provisions of the current law as automobile emissions, transportation controls, land-use controls and implementation of state plans.

#### FACT (NATIONAL GOVERNORS' CONFERENCE)

The National Governors' Conference adopted a unified position on the issue of nondegradation at its conference in New Orleans in 1975 and there has been no indication that the basic position has changed since then. As cited in Policy Positions 1975-1976, National Governors' Conference: "The significant deterioration issue should be resolved by Congress in a manner which gives each State the flexibility to determine for itself what is meant by 'significant,' consistent with local values."

In a letter dated April 18, 1975 to the Senate Subcommittee on Environmental Pollution, Governor Salmon, Chairman of the National Governors' Conference Committee on Natural Resources and Environmental Management conveyed this same position:

"The issue of significant deterioration should be resolved by Congress in a manner which gives each State the flexibility to determine for itself what is meant by "significant," consistent with local values." (Implementation of the Clean Air Act—1975, Hearings, Part 2, page 1939).

Subsequent to that time, consensus of the 50 Governors has not been reached on legislative proposals. This was brought to the attention of the full Public Works Committee in January 1976 by Governor Thomas P. Salmon, Chairman, Committee on Natural Resources and Environmental Management, National Governors' Conference: "As Chairman of the Natural Resources and Environmental Management Committee of the National Governors' Conference I have followed this controversial issue closely. The Committee's Clean Air Task Force has attempted to reach a consensus on prevention of significant deterioration, but

the varying policy positions of the 50 Governors has precluded formulation of a legislative amendment which would gain unqualified NGC support.

"Our Clean Air Task Force has advised me that the prevention of significant deterioration provisions contained in Senate Print No. 6 are unacceptable. However, the Task Force has been unable to develop an alternative proposal that would be acceptable to the National Governors' Conference."

The concern of the Governors for State determination was reiterated in the telegram of Governor Ray, Chairman, quoted in the May 26 Congressional Record.

#### SOUTHERN GOVERNORS' CONFERENCE

The 18-member Southern Governors' Conference adopted the following resolution at their 41st annual meeting in Florida in September 1975 which expresses grave objections to a national nondegradation policy over states' rights. Member states are: Arkansas, Alabama, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Texas, Tennessee, Virginia, West Virginia and the Virgin Islands. The text of the resolution follows.

#### SOUTHERN GOVERNORS' CONFERENCE RESOLUTION ON AIR QUALITY

"Whereas, the Congress of the United States passed the Clean Air Act and established certain standards of air quality and timetables to meet those standards, and

"Whereas, many rural areas of the country still suffer serious economic problems and improved quality of life can come only with better jobs and improved economic developments; and

"Whereas, the interpretation of "significant deterioration" presently being made arbitrarily prohibits any economic development which will cause significant reduction in the air quality in any area, even though the air quality would still be well above the level required for good health; and

"Whereas, this definition of 'significant deterioration' will condemn many areas of this country to continued poverty and substandard quality of life;

"Now, therefore, the Southern Governors' Conference urges Congress to amend the Clean Air Act so as to define the term 'significant deterioration' to permit attainment of primary and secondary standards already established, and that the Act be further amended to clarify the rights and responsibilities of the State to administer air quality programs within the states in whatever manner they choose to meet the national standards."

#### STAPPA RESOLUTION

In their December 1975 conference in Austin, Texas, the 25 State and Territorial Air Pollution Program Administrators (STAPPA) who are charged with implementing the provisions of the Clean Air Act in their respective states unanimously adopted the following resolution which opposes standards stricter than present law: "That Sec. 101(b) of the Clean Air Act should be amended to read as follows: '(1) to protect and enhance the quality of the Nation's air resources by establishing, achieving and maintaining national ambient air quality standards, standards of performance for new stationary sources and national emission standards for hazardous air pollutants so as to promote the public health and welfare and the productive capacity of the Nation, but nothing in this Act is intended to require the establishment by the Administrator of air quality standards more stringent than primary and secondary ambient air quality standards; and that Section 110 should be amended by adding the following subsection (g) thereto: '(g) Each state plan shall determine what degradation of air quality, if any, is to be permitted.'"

The State pollution control officials endorsing this resolution included:

Arkansas, Connecticut, Delaware, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Maryland, Massachusetts, Michigan, Minnesota, Nebraska, New York, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Vermont, Virginia, West Virginia, Wisconsin, Wyoming.

#### ALLEGATION

"Legislative proposals submitted to the Committee and considered by the Committee included: The American Paper Institute, the American Mining Congress, Dupont, the National Association of Manufacturers, Shell Oil, Utah Power

& Light, Cast Metals Federation, Chamber of Commerce, National Association of Counties, the Electric Utility Industry, Continental Oil Co., the Sierra Club, and the State of New Mexico." This was in addition to the President's proposal.

#### FACT

The fact of submissions is not the case in point but the extent to which the Committee "considered" these proposals is questionable. As stated earlier, full accord was given by the Subcommittee to the Sierra Club and the State of New Mexico, proponents of a nondegradation policy. But as previously stated, the President's proposal, which was to have been presented by FEA Administrator Frank Zarb, was in fact not discussed during his appearance before the Committee. The fact is that the President's proposal was ignored in the hearing process. While it is printed in the Committee record it was certainly not given the consideration normally accorded the presentation of any Administration witness on policy recommendations to the Congress that affect the entire nation.

Moreover, the remaining legislative proposals received from industry were not treated during any hearing but merely appear as statements for the record, in large part contained in the Appendix of the hearing report.

Without exception, all of these statements for the record express grave concerns with the job and economic implications of the Committee proposal.

It is universally agreed—probably the only area of agreement in this controversy—thus the utilities industry will be the most heavily impacted by this proposal. Estimates range from \$11 to \$16 billion. But there is no record of economic input data from the electric utility industry in the hearing record.

Following are the excerpts from the Industry statements on nondegradation which are contained in the hearing record appendix. Since industry will pay the initial tab, to be passed on ultimately to the American consumer, their views should be noted.

#### SUMMARY OF API POSITION ON NONDEGRADATION

American Paper Institute—See Appendix A, pp. 1812-13:

The relationship of the nondegradation issue to the pulp and paper industry is seen in high relief when it is clearly understood that this industry, in order to meet demand, must either build new pulp and paper mills or expand existing mills. Because of the diminishing lands areas available for new sites as a result of the dependency of a pulp and paper mill on sustained long-term forest yield and need for water in the manufacturing process, the industry perceives that it will be expanding more mills than building new mills. The issue then is how does nondegradation affect expansion.

API believes that the bold interpretation seen in "no significant deterioration" regulations amounts to an unwarranted and unauthorized subjective land use program not contemplated by Congress nor envisioned in the judicial interpretation of Section 101 of the Act. Further, API submits that the complete concept of nondegradation was never before Congress in any meaningful way. The problems of fuel allocation and cost, as well as economic planning, management and balanced judgment vis-a-vis nondegradation were never the subject of debate. It can be said that the issue of fuel availability and cost were not fully appreciated at the time the Clean Air Act of 1970 became law.

American Mining Congress—See Appendix A, pp. 1796-97:

In considering this matter it is not necessary to decide whether Congress in 1970 intended to include the general notion of no significant deterioration in the Clean Air Act; that issue has already been decided affirmatively by a U.S. District Court and was ultimately affirmed by an equally divided Supreme Court which issued no opinion. (It is interesting to note that the District Court case, which established the doctrine of no significant deterioration, was filed, argued, and decided all in one week—May 24-May 30, 1972—the government having only two days to prepare its brief on this complex and far-reaching matter.) The issue that exists now is whether or not the notion of no significant deterioration, as pronounced by the District Court, should remain in effect. This Subcommittee should examine the District Court determination and decide whether or not to allow the decision to remain in effect or to legislate a different policy. The theory of no significant deterioration as pronounced by the Court and interpreted by EPA is unclear, confusing and ineffective. Further, EPA's regulations attempting to administer a program to implement this theory can be considered an administrative nightmare at best and an impossibility at worst. These regulations are the

subject of over ten lawsuits in various courts throughout the country, and it does not appear that these challenges will be resolved within the next year or more.

Accordingly, the American Mining Congress recommends the adoption of legislation such as that proposed in S. 594 (Section 601) and in S. 693 which are currently pending. These bills propose to amend the findings and purposes of the Clean Air Act so as "to protect and enhance the quality of the nation's air resources by establishing, achieving, and maintaining national ambient air quality standards, standards of performance for new stationary sources, and national emission standards for hazardous air pollutants so as to promote the public health and welfare and the productive capacity of the nation, but nothing in this Act is intended to require or authorize the establishment by the Administrator of standards more stringent than primary and secondary ambient air quality standards."

Cast Metals Federation—See Appendix A, p. 2046:

To establish that the individual states have the right to decide matters of "significant deterioration" of air quality. States would make the judgment as to whether secondary air quality standards are sufficient protection or whether more stringent limitations are necessary.

Chamber of Commerce of the United States—See Appendix A, p. 2058:

On the subject of significant deterioration, the National Chamber supports Section VI of S. 594, the Administration's "Energy Independence Act of 1975." This section is designed to provide legislative relief from court interpretations which require EPA to prevent "significant deterioration" of the air quality better than that required to protect the public health and welfare. This is not only unnecessary, but highly expensive and a possible illegal form of land use control by EPA. This nondegradation policy, applied to all areas with air quality better than national secondary standards, imposes substantial economic and social hardships and dislocations by foreclosing economic development in large areas of the United States. It thereby adds to concentrated growth in existing metropolitan areas where our greatest social problems lie.

However, the National Chamber realizes that it is appropriate for some geographic areas of undeniable scenic or aesthetic value to be the subject of preservation. These pristine areas should be set aside by the concerned state agency after public hearings on the record to hear from all sides with an interest in such a ruling. Where such areas are contiguous to cities, the municipal growth impact appraisal should be mandatory in setting standards.

Du Pont—See Appendix A, p. 1854:

In our opinion, the court decision prohibiting the "significant deterioration of existing air quality" in those areas where the existing air quality standards are presently being met is entirely too broad, and has had a detrimental impact on the siting of new industrial and power generating facilities which are badly needed. We believe that Congress should take action to carefully define the scope of federal authority under the Clean Air Act to only those instances where the national ambient air quality standards are not being met.

National Association of Manufacturers—See Appendix A, pp. 1913-1917:

We believe that Congress should clarify its intent in respect to "non-degradation" and "significant deterioration." These terms which are neither used nor defined in the Clean Air Act and in its legislative history, have resulted in a major and as yet unresolved controversy, a controversy based on interpretation of legislative intent.

Literally interpreted, "nondegradation" means no growth, and the court decisions have had the effect of instituting just such a policy nationwide.

In testimony before the House, Mr. Frank G. Zarb, Administrator of FEA, candidly admitted that he did not know what "significant deterioration" meant, and that he doubted that Mr. Train knew either. To this statement, Rep. Hastings replied, "The courts don't know what it means and Congress doesn't either." In his prepared statement, Mr. Zarb stated:

"The additional uncertainties created by yet another layer of regulatory requirements on the energy industry is not compatible with the goal of expeditiously developing needed domestic energy resources. There is a need to simplify and rationalize the complex regulatory constraints on the domestic energy industry. . .

"Reports by the National Academy of Sciences and others, have shown that current scientific evidence does not support the need for ambient standards more stringent than the currently promulgated primary and secondary ambient air quality standards for particulates and sulfur dioxide. Accordingly, FEA does not believe the potential benefits from the significant deterioration program justify the potential cost of constraining the development of domestic energy resources."

The highly questionable nature of alleged benefits of a "non-degradation" policy from the social, economic and environmental standpoints were best expressed by the U.S. Department of Health, Education and Welfare in its comments to EPA Administrator Russell Train on October 16, 1973 on EPA's proposed rulemaking on Prevention of Significant Air Quality Deterioration (Federal Register, July 16, 1973). DHEW's summary stated: "While we lack detailed data from the EPA or other sources about the specific impacts of the proposed non-deterioration regulations, we believe that their costs might outweigh their benefits by a significant margin.

"According to EPA, the only documentable benefits to be achieved by non-deterioration regulations would be 'aesthetic, scenic, and recreational.' (Proposed Rulemaking, p. 18987). However, these regulations might in fact produce no consequential benefits of this kind, and alternative regulatory approaches could probably attain equal (or greater) benefits without imposing substantial costs. Against these benefits must be weighed the risk of negative impacts on economic growth, urban development, capabilities, energy resource development, consumer prices, the status of low-income persons and the public health. Non-deterioration regulations would produce a national land-use policy giving singular attention to air quality criteria. Serious land-use distortions might result, particularly if only a few regions would be capable of absorbing population or economic growth.

"While non-deterioration regulations risk imposing substantial net costs on the nation as a whole, a disproportionate share of those costs might be borne by persons of limited economic means and residential mobility. These persons would benefit relatively little from the preservation of air quality in rural areas, while they would disproportionately bear any impacts of curtailed economic growth, altered urban and rural development trends, constrained national capacity to absorb anticipated population increases, and higher consumer prices for energy and manufactured goods. These impacts could compound the difficulties faced by all levels of government in responding to the needs of the poor, the elderly, racial minorities, and persons otherwise disadvantaged.

"The health impacts of non-deterioration regulations could also be adverse. Present national ambient standards account for all but inconsequential or unforeseeable health risks. If, after time passes, those standards are found to be sufficient to protect the public health, then superseding non-deterioration standards would produce no health benefits. The latter standards might well create adverse health effects should cities be delayed in their efforts to achieve the national ambient standards. Conversely, if the national ambient standards are unexpectedly found to permit dangerous levels of air pollution, then non-deterioration standards would have imposed more substantial health problems by having perpetuated a greater concentration of air pollution in densely-populated urban areas than would otherwise have occurred. Other adverse health effects might arise from energy shortages and from the possible health-impairing consequences of economic hardships imposed on low-income families.

"All adverse impacts risked by non-deterioration should be investigated, quantified if possible, and weighed against any aesthetic and recreational benefits before any specific regulations are promulgated. Particular attention should be accorded to possibly irreversible effects of any alteration of national or regional development trends. . . .

"If the legal situation makes this review impossible, the regulations selected for promulgation should minimize the risk of major adverse impacts by providing for a minimum of Federal impingement on local preferences. The Federal government, in this neutral role, should avoid altering economic or demographic trends in any manner not now known to be beneficial. It should also avoid imposing substantial uncompensated costs on disadvantaged persons.

"If the courts are likely to interpret *Sierra Club v. Ruckelshaus* and the Clean Air Act as mandating a more aggressive Federal regulatory role, it may be necessary to consider legislative amendment of the Clean Air Act to clarify where and how 'significant deterioration' should be prevented."

Since the legal basis for the courts' decisions has been the "protect and enhance" language of Section 101(b) (1) of the Act, we believe this section should be modified to read along the following lines:

"(1) to protect and enhance the quality of the Nation's air resources by establishing, achieving, and maintaining national ambient air quality standards, standards of performance for new stationary sources, and national emission standards for hazardous air pollutants so as to promote the public health and welfare and the productive capacity of the Nation, but nothing in this Act is

intended to require or provide for the establishment of ambient air quality standards more stringent than national primary and secondary ambient air quality standards;". By thus making clear the legislative intent, the controversy would be resolved and, at the same time the public health and welfare would be "protected and enhanced" by standards designed to protect against "any known or anticipate adverse effects."

Shell Oil Company—see Appendix A, pp. 1954-55, 1960-61:

To commit the National and its people to the attainment of a "zero-risk" goal of air quality while simultaneously subjecting them to the corollary "infinite risk" of all other needs, comforts and benefits inherent to the broadest concept of public health and welfare appears to be an irresponsible course of action. Herein rests the first basic fault of the Clean Air Act, as presently amended.

We submit that it is time for Congress, the EPA, and the Nation to acknowledge these facts and to abandon the "zero-risk" goal of air quality implicit in the Clean Air Act, as presently amended. To this end, we recommend: that Section 101(b)(1) be amended to provide appropriate statutory definitions of each word, term or phrase contained in the Act's statement of purpose, i.e., "... to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population;";

Despite the many known or suspected inadequacies of the technical basis for the Nation's early air pollution control efforts under the amended Act, they could be endorsed and supported by nearly everyone on the grounds that an air pollution problem existed, that some remedial action was required, that the potential benefits of success were appreciable and that the social and economic dislocations due to possible errors were of acceptable or tolerable magnitude.

This situation does not apply to the newer EPA programs such as "transportation and land use control," "indirect source" "no significant deterioration" and "air quality maintenance area" programs. Even EPA acknowledges that these programs, individually or collectively, can have very serious impacts on society, the economy and the future development of the Nations and, yet, they are designed to achieve only modest incremental improvement in air quality. Such programs forceably demonstrate the necessity for having substantial evidence and solid documentation to support the policies and environmental justification for the programs.

Section 110(a)(2)(b) of the amended Act authorizes and directs EPA to take certain actions as may be necessary to insure attainment and maintenance of the national ambient air quality standards including land-use and transportation controls. Partly by reason of this authority and direction, partly by reason of Court decisions and partly by reason of the tight deadlines imposed by Congress in attaining the national standards, EPA has been obligated to promulgate land use control measures in the form of "indirect source" regulations and "no significant deterioration" measures in addition to the "transportation and land use control" measures we have discussed earlier in this statement.

It seems needless to belabor the degree to which the Nation's people rely on the availability and use of their respective communities' roads, airports, educational centers, medical and clinical facilities, shopping centers, churches, recreational facilities, stadiums and other vital services which now are covered by EPA's "indirect sources" program. The people's dependence on these facilities for continued good health, welfare and safety should be apparent. It seems equally apparent that it is improper to subject them to land use controls that may limit their future accessibility and utility solely on the basis of air quality considerations.

The other example of land use planning based solely on air quality considerations in EPA's "no significant deterioration" program. If for no other reason, this program also is improper. It however, is based on a false or faulty air quality issue.

The "no significant deterioration" program severely limits the possibilities of locating industry in parts of the Nation presently having air quality better than the national standards. In reviewing the merits of the lawsuit on this subject, the court seems to have been guided more by the ambiguities of the "to protect and enhance" phrase of Section 101(b)(1) rather than the specifics of Section 110(a)(2). One would have expected the court, in doing so, to have provided EPA and the Nation with a meaningful definition or explanation of the expression "to protect and enhance." This was not done. The court simply provided a substitute term, i.e., "no significant deterioration" of air quality without any definition or clarification. The court thereby perpetuated the use of ambiguous language. Under any semantic term or equivalent, the "no significant deteriora-

tion" or "anti-degradation" issue is a false issue. It seeks to maintain the status quo of air quality over about three quarters of the Nation's land surface without any justification. Keeping in mind the scope and severity of the definition of the term "public welfare" as found in Section 302(h) of the amended Act which properties and esthetic values the national secondary ambient air quality standards seek to protect, changes in air quality below the secondary standard cannot be subjectively observed nor instrumentally measured in any meaningful way.

Thus, EPA has employed the authorities and directions contained in Section 110(a)(2)(B) to inaugurate land use control programs based solely on air quality considerations in the effort to comply with the statutory deadlines for attaining and maintaining the national ambient air quality standards. Herein rests the third basic fault of the Clean Air Act, as presently amended.

We submit that it is improper and not in the best interests of the Nation or its people to promulgate land use control programs based solely on air quality considerations. Land use decisions are far too important and involve far too many diverse factors to allow them to be dictated by any single consideration.

We recommend that Congress, by further amendment of the Clean Air Act, prohibit EPA from adopting, promulgating or enforcing land use control measures. We further recommend that EPA be prohibited from requiring the States to promulgate land use regulations or programs for air quality control purposes.

Utah Power and Light Company—See Appendix A, pp. 1984-85:

Significant deterioration is a high sounding phrase. In theory, it means protecting and maintaining clean air in presently underdeveloped areas. In practice we fear it means continued poverty in many rural areas of the west, an ever greater concentration of industrial pollution and population in already crowded urban centers and an ever increasing national dependence on imported energy and mineral resources because of an inability to develop our own resources under these restrictions.

A clarification should be made in the statute tying the concept of deterioration to an avoidance of ambient levels which are harmful or at the very least to allow areas to increase to ambient levels equal to the Federal secondary standards and to require only those emission controls which can be justified based on a comprehensive cost benefit analysis as outlined above.

The present regulations promulgated by EPA are devastating to the West because of their treatment of Federal and Indian lands. It is not possible for development of power plants or other industry within the state of Utah to be kept sixty miles from Federal or Indian lands. There is no such place in the state of Utah. Federal and Indian lands constitute more than 50% of all lands in the state and far more than 50% of all the lands from which energy resources can be produced.

Significant deterioration as now applied is a serious impediment to development of the best energy resource which this nation possesses, namely low sulphur coal. If this nation is to reduce its dependence on imported energy supplies and if we are to achieve the best air quality for the nation as a whole, it is imperative that we move ahead without undue delay on a program which will allow, under proper control and without overkill, the utilization of this resource.

#### ALLEGATION

No studies have been done. A further 1-year study is necessary to have adequate information upon which to base a decision.

#### FACT

No one has claimed that no studies have been done, indeed a minimum of 20 individual studies have been made in an attempt to analyze impact of the Committee proposal on such vital issues as employment, coal development, oil imports, consumer costs, and economic growth. It should be noted that because these studies were put together on an individual piece-meal basis it is impossible to provide for a comprehensive overview of total impact. It should be further noted that these studies were developed in reaction to the Committee amendment; and, therefore, any conclusions of potential adverse consequences were not part of the consideration in developing this nondegradation proposal. The very fact that so many studies were developed in reaction to the Committee proposal, of itself, indicates the serious questions raised on the effect of this proposal on the nation's economy.

Of the studies annotated in the May 26 Congressional Record, it should be noted that 21 of these were prepared, not in connection with the proposal before us, but prior to 1975 in relation to the EPA regulations. Since the Committee proposal, and its impacts, is far different from the existing regulation, it is questionable if this listing is relevant to the questions now being raised.

I wish to call my colleagues' attention to the Annotated Bibliography "Studies on Nondeterioration of Air Quality," prepared by the Department of Commerce Regulatory Policy Committee in May, 1976, which I am inserting in the Congressional Record.

This compilation lists 17 studies done to date on proposed nondegradation legislation and provides summaries of conclusions for each of the studies. I believe this will be very helpful to my colleagues to review—(1) to point out the specific questions being raised on inhibiting effects of Section 6 on diverse economic sectors of the country and (2) in demonstrating the need for unified, comprehensive study of this issue, as my amendment would do. To quote from the Department of Commerce Summary to this compilation of studies, "These studies have contributed valuable insights on the technological and economic ramifications of nondeterioration proposals. In the process of doing so, they have shown the difficulties involved in developing an overall assessment. They point out the gaps in knowledge and point the way to completing the necessary industrial and regional analyses which would fill the gaps."

Geographically, these analyses attempt to cover the implications of non-deterioration for the following localities:

Colorado, Florida, Iowa, Maine, Minnesota, New Mexico, Texas-Louisiana, West Virginia, Wisconsin.

Boston, Dallas-Fort Worth, Four Corners, "East", "Central", "West", Rural Areas, Urban Areas, Regions, General.

While the nondegradation proposal of Section 6 in S. 3219 applies to 28 major sources, the analyses cover only 9 major industrial sources. This again demonstrates the gap in knowledge of the full effects of this proposal. Following is the listing of major source coverage of studies:

#### MAJOR SOURCE COVERAGE OF STUDIES

##### *List of 28 major sources in S. 3219—Source studied, not studied*

1. Fossil-fuel fired steam electric plants, Studied.
2. Coal cleaning plants, Not Studied.
3. Kraft pulp and paper mills, Studied.
4. Portland Cement plants, Studied.
5. Primary zinc smelters, Studied.
6. Iron and steel plants, Not Studied.
7. Primary aluminum ore reduction plants, Not Studied.
8. Primary copper smelters, Studied.
9. Municipal incinerators, Not Studied.
10. Hydrofluoric acid plants, Not Studied.
11. Sulfuric acid plants, Not Studied.
12. Nitric acid plants, Not Studied.
13. Petroleum refiners, Studied.
14. Lime plants, Not Studied.
15. Phosphate rock processing plants, Not Studied.
16. Coke oven batteries, Not Studied.
17. Sulfur recovery plants, Not Studied.
18. Carbon black plants, Not Studied.
19. Primary lead smelters, Studied.
20. Fuel conversion plants, Studied.
21. Sintering plants, Not Studied.
22. Secondary metal production facilities, Not Studied.
23. Chemical process plants, Not Studied.
24. Fossil-fuel boilers, Studied.
25. Petroleum storage and transfer facilities, Not Studied.
26. Taconite ore processing facilities, Not Studied.
27. Glass fiber processing plants, Not Studied.
28. Charcoal production facilities, Not Studied.

*Major sources not listed in S. 3219*

Coal mining, Studied.

Oil and gas extraction, Studied.

Industries, generally, Studied.

The analyses cite a number of factors which enter into considerations of the impact of proposed nondeterioration legislation such as industry factors of size and location of plants, energy source and use, availability of water and raw materials and plant design; and regional factors such as meteorological conditions, terrain, background emissions and availability of land. The assumptions, methodologies and analytical measures of impact vary widely but certain conclusions are common to many of the studies:

Class I areas, including "buffer zones," appear to be a major obstacle to economic growth for the industries analyzed;

Capital costs required to meet the non-deterioration requirements are higher than the Clean Air Act current requirements;

Nondeterioration requirements will necessitate the use of smaller size plants, the installation of additional control technology, the construction of taller stacks, and relocation of plants at alternative sites.

Future growth opportunities will be restricted without a Class III designation or a variance from Class II requirements.

To highlight some of the individual study conclusions:

*Oil refineries*—Production costs would increase due to reduction in plant capacity, the necessity to use stringent control technology and locating plants at less advantageous sites. Dislocation of planned industrial plants to non-impacted sites would cost \$640 million to \$1.8 billion in capital investment in 1975 dollars in order to meet 1985 demand growth. The regulations will affect energy independence. (Bonner & Moore Study)

*Power plant capacity*—In flat terrain, a 2,000 megawatt powerplant could be built; but in hilly or mountainous terrain, only a small plant could operate in a Class II area. For example, in New Mexico, the maximum size calculated allowable was 158 megawatts, an inefficient size for a new facility, and in very hilly terrain, such as West Virginia, 49 to 64 megawatts would be the maximum size allowable. (ERT Study)

*Western coal mining*—For air quality control regions (AQCR) where more than one surface mine is proposed, the proposed amendments would prohibit new surface mining operations in such AQCR's. (ERT Study)

*State of Maine*—Industrial development in Maine would be more severely restricted than in many other states. The presence of hilly or mountainous terrain and the potentially large number of Class I areas would exclude industrial development in many parts of Maine. (ERT Study)

*State of Florida*—Significant deterioration proposals will add \$120 to \$300 million to costs of electricity supplied to Florida Light & Power Company customers (Fla. Power & Light Co. Study)

*States of Minnesota and Wisconsin*—Impact on both Minnesota and Wisconsin would be severe in terms of the siting of new power plants and providing electricity for new industries in these states. (Hoffman & Bechthold Study)

*Rural Areas*—Rural area development will be higher in cost due to added control requirements; not locating plants where they would otherwise have been located; plants would be built smaller than otherwise. (ICF Study)

*Urban Areas*—Economic development and employment in urban areas violating NAAQS would not increase; this is attributable to current Clean Air Act. Nondeterioration provisions may result in siting new facilities further from urban centers than would otherwise occur. This would tend to contribute to further urban sprawl, a lengthening in job travel time, adverse environmental effects and other socio-economic effects. (ICF Study)

*Energy Development*—Oil consumption would increase by 1 million barrels a day (MBD) of largely imported oil. Oil field development, such as tertiary recovery, could be inhibited. Natural events which degrade air quality, e.g., dust storms, could preclude development of energy and material resources such as oil shale, coal, and copper. (ICF Study)

*Consumer Utility Bills*—In the absence of nondeterioration, the Clean Air Act will cost each American household \$1,500 between 1975–1990. The nondegradation amendment to S. 3219 would add \$299 to \$673 per household. (NERA Study)

**Jobs**—The electric cost per household between different regions “indicates the extremely disparate regional effects of the legislation. To the extent these costs are passed on to industrial customers regionally, they are likely to discourage the expansion of electric-intensive industries in high-cost areas, and, as a consequence, adversely affect employment and economic growth in those regions.” (NERA Study)

**Electric Utility Industry**—The electric utility industry will experience the major economic impact. The Senate proposal will increase the electric utility industry capital requirements by about \$11.5 billion over the next 15 years. (EPA Study)

Based on the projected growth rate of 7.5 percent in generating capacity, capital requirements for production equipment in the utility industry would range from \$107 billion to \$127 billion over the 1981–90 period. Total production costs would range from \$170 to \$250 billion. (GE Study)

#### ALLEGATION

EPA's basis for requiring pollution clean up has been challenged and EPA staff has been charged with deliberately distorting data regarding the effects of pollution. “These charges have effectively been laid to rest by the hearings held Friday, April 9, by the House Interstate and Foreign Commerce and the House Science and Technology Committee.”

#### FACT

These charges have not “been effectively laid to rest.” There still remain many questions on the veracity of this study. The House Science and Technology Committee Subcommittee on Environment and the Atmosphere, chaired by Congressman George Brown of California, is now conducting a technical field investigation of the EPA CHESS study because of the controversy and its relation to sulfate standards promulgated by EPA. The Congressional hearing of April 9 served only to clarify the issues involved; the Congressional investigation underway is intended to examine the methodologies employed by EPA in arriving at the results of the CHESS study in order to resolve the present controversies as far as the Congress is concerned.

I wish to call my colleagues' attention to the May 4 Congressional Record (H3875–H3896) House consideration of H.R. 12704, EPA's authorization for research and development, during which considerable time was devoted to questions on the CHESS study. Chairman Brown advised the Membership of the Committee's investigation into the methodology of the CHESS study and submitted the following memorandum outlining the Committee investigation: Committee on Science and Technology, Washington, D.C., April 23, 1976, Memorandum.

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COMMITTEE ON SCIENCE AND TECHNOLOGY,  
Washington, D.C., April 23, 1976.

#### MEMORANDUM

To: Olin E. Teague, Chairman

From: George E. Brown, Jr., Chairman, Subcommittee on the Environment and the Atmosphere

Subject: Investigation: Sulfate Health Effects Program (CHESS) and EPA Evaluation Plan

After reviewing the results of the Joint hearing of my Subcommittee and Mr. Rogers' Commerce Subcommittee on April 9th, I feel we should keep up the momentum established by undertaking further investigations by our Committee. In previous hearings (as well as on April 9) we have established that there were technical and methodological problems with the original CHESS studies. For example, a Subcommittee report now being printed will recommend that EPA conduct another sulfate health effects study with goals similar to the CHESS goals, but avoiding the mistakes of CHESS.

However, our earlier hearings have not documented in detail what were the problems with earlier studies, exactly how these studies impact EPA regulatory policy (i.e., why they are so important), and how the next generation study should be done. In order to do this, we need to get a clear understanding of the reliability and precision of the health effects data in the concentration levels

reported in the CHESS monograph, and see how the data relate to present and projected SO<sub>2</sub> and sulfate standards. Further, we need to see if more substantive conclusions might be drawn from analysis of the subsequent four years of data taken and not yet translated. A second task of the investigations will be to review the EPA program for sulfate health effects determination, testified to by Mr. Train on April 9, to see if the program appears likely to produce the timely results required to support standards and if the resources planned for that program are adequate.

The draft study plan is attached. The field visits portion of the investigation will require three staff people plus the assistance of two or three GAO investigators for at least two weeks. We will require several days travel to the CHESS data gathering sites for two people at each site two days. The team will require a week at EPA Triangle Park Lab in Durham, North Carolina. The balance of the investigation can be carried out in Washington, D.C. Your concurrence and approval of this program is solicited.

#### INVESTIGATION PLAN

#### *EPA SO<sub>2</sub> and sulfate epidemiology research program (CHESS)*

##### Scope and Objective

The purpose of this investigation is two-fold: first, we wish to follow up on the hearings held jointly on April 9 by the Science and Technology and Interstate and Foreign Commerce Committees. The hearings were initially called to investigate the allegations in the Los Angeles Times of improper interpretation of the CHESS study data. As a result of the hearings the question has shifted from one of impropriety in the conduct of the CHESS studies to a question as to the scientific rigor and adequacy of the CHESS studies. To answer this remaining question requires review of the data gathering techniques used in the program with associated limitations, uncertainties, etc., together with a review and evaluation by unbiased experts of the methods used in analyzing and interpreting the data to assess if unwise or biasing techniques were used in arriving at the results in the CHESS monograph. These reviews will lead to a review of the issue as to whether or not the CHESS results alone provide a sound basis for establishing primary and/or secondary air quality standards for sulfates. It may well be that the uncertainty recognized for these results at lower concentration levels are such that any biasing of analysis can have little or no effect or influence on the standards. Nonetheless, the rigor and adequacy of government sponsored research must be established or measures must be found to correct any deficiencies uncovered in this review.

The second issue which arose in the April 9 hearings is the pressing need for a sound technical basis for establishing air quality standards for sulfates. The EPA Administrator testified that a program was in place to do just this. The investigation team should review the EPA program considering all unevaluated and unpublished CHESS data and other studies that have been made to assess if the program appears sound and expeditious and to assess whether or not necessary resources are available to assure success in the program.

##### Phase I—CHESS Data Gathering

There were 6 or 7 data gathering regions each with several instrumented sites. The research program in each region was carried out by a team of researchers.

Each area program will have to be reviewed by interviews with scientists who conducted the study and examination of procedures and data. The review will address at least the following items:

##### Data sites

- Review of test procedures and practices

- Time and intervals of data acquisition

- Instrumentation used, calibration techniques, etc.

- Special deviations from standard practice

- List of data gathered

- Known differences from other areas or sites

- All anomalies established at each site during test interval

- Averages/totals/regressions/etc., carried out on data before it was forwarded to the management center for compiling

Interview researchers as to comments on how data was gathered and its use in summaries reported in CHESS monograph.

Each area will take two to three days by two investigators—each two-man team can cover two areas in a week. This phase of the investigation can be carried out by six men in one week. They should return with taped interviews and data review results.

#### Phase II—Review of Analysis of CHESS Data

In Phase II investigators must visit the EPA Triangle Research Center Lab and interview researchers who participated in computation and analysis of the data. The following information will be sought:

What area data not used—why?

Follow-through the entire procedure used compiling, combining, averaging, and otherwise stratifying, summarizing, and interpreting data. What bands of confidence established—why?

Interview researchers who participated for reaction to correctness or soundness in handling data.

This place should take three men one week.

#### Phase III—Review and Final Drafting of CHESS Report

In the third phase the investigators will obtain names of EPA and outside reviewers of the draft results of the CHESS Report and recommendations generated from the research program for sulfur oxide air quality standards. The following steps will be taken:

Compare first draft and final version.

Find which suggested modifications were and which were not used—why?

Interview selected EPA officials and consultants.

Track modifications to draft results suggested by above officials and consultants.

This phase should take four men three to five days.

#### Phase IV—Review EPA Sulfate Health Effects R&D Plan

This phase will include the following items:

Review a compilation of all results of sulfate health effects studies now in EPA's hands, together with new data from CHESS program.

Review EPA R&D plan with agency personnel.

Inventory of projects in EPA—elsewhere.

Staffing.

Budget.

Feedback session with EPA.

This phase should take three men four days.

#### Phase V—Report of Investigation

Phase V will encompass the following:

Write report of findings.

The report generation will take three men one to two weeks.

*Note:* Each investigative group must have one member familiar with and experienced in research methods and hopefully epidemiology studies and/or accepted statistical data analysis techniques.

Completion of the study will require three scientific consultants augmented by three or four statistical or other personnel from GAO.

We want to get to the roots of all of these allegations with regard not only to whether or not there was a deliberate falsification of the data, which may not have occurred, and we feel probably did.

#### SUMMARY

In summary, as the Committee record indicates, the actual hearings on this issue were limited at best. But more important than the actual limited testimony on nondegradation, the most critical amendment to the Clean Air Act, is the limited scope of hearings that were held on this issue. The limited scope of the hearings did not address properly any of the major unknowns to national interests related to the economy, jobs and energy resources development. They were conducted "before-the-fact" and "not-after-the-fact", treating the issue of nondegradation only in the broadest philosophical terms without considering any of the pragmatic questions that must be resolved before formulating national policy which could be detrimental to our national welfare.

There was no discussion in Committee hearings on the technical questions arising from the final Committee proposal; there was no discussion of the cost of compliance and if this cost could be met by industry; there was no discussion regarding the capability to meet the stringent emission increments under the Class I and Class II areas; there was no discussion of how states would address how to grant construction permits to industries competing for the same limited increment; most important, there was no discussion of what would be the full ramifications on the national economy in terms of capital cost requirements, job constraints, unemployment, and energy resource development. Surely this Body should have the full and complete picture before making a final legislative decision for the country that will affect the lives and livelihood of virtually all Americans.

Further, we can ill afford having the American people subjected to a national policy which, without proper study, could lead to lasting and possibly severe penalties—particularly during our Bicentennial Year.

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### BRITISH POSITION OPPOSING BAN ON FLUOROCARBON AEROSOLS

Mr. DOMENICI. I want to bring to the attention of my colleagues a recent report published by the Department of the Environment of Great Britain, that country's principal environmental agency. This report, entitled "Chlorofluorocarbons and Their Effect on Stratospheric Ozone," deals with the current scientific controversy over the hypothesis that halocarbons—which are used in aerosol spray containers and as coolants in refrigerators and air conditioners—adversely affect the ozone layer in the upper atmosphere. What is particularly significant is that this report contains findings and conclusions by an objective and expert group which are in full accord with the proposed provisions of section 16 of the Clean Air Act amendments (S. 3219), relating to ozone protection. [See Secs. 150–159]

I have previously stated my strong support for section 16, as it was reported by the Public Works Committee. In my view, section 16 properly recognizes that more scientific research and information is needed before a reasonable conclusion can be reached on the validity of the halocarbon-ozone depletion theory; accordingly, the section provides for an immediate intensive research program. At the same time, section 16 vests in the environmental agency a broad, in-place authority to permit prompt and comprehensive regulation of halocarbons whenever such action is warranted.

The British environment agency's report provides further support for the position I had advocated in favor of section 16. Thus, the agency recommended to the British Government that no action be taken to ban halocarbons used in aerosol spray containers and refrigeration equipment until further research into their effects on ozone is completed.

Consistent with the testimony of many expert witnesses from the scientific community and United States regulatory agencies before subcommittees of both the House and the Senate, the British environment group found that the current state of scientific knowledge on this issue is inconclusive and speculative. It strongly recommended that research be continued "to reduce some of the uncertainties surrounding the whole matter" in order to achieve better informed decisionmaking. As the agency noted:

It is important to emphasize that all estimates of ozone depletion so far made are based on theoretical models using the limited amount of experimental

data available. Therefore predictions are only as good as the models on which they are based and the quality of information used.

... the available information points to the conclusion that although possible health effects due to increased UV exposure cannot be ignored, the magnitude of the increased exposure is uncertain and its significance is still more uncertain. More information is needed if rational decisions are to be taken.

As the agency further stated :

It is easy to produce hypotheses which forecast dire consequences ; it is much more difficult to obtain data which support the acceptance or rejection of such hypotheses.

The British environmental group also concluded that "there appears to be no need for precipitate action," and that sufficient time exists to undertake the required research. This conforms to the weight of the testimony of the experts in the congressional hearings here.

The strong emphasis on the need for further research in the British report is consistent with our own approach to the problem. Substantial research efforts in this country are already underway sponsored by both the Government and private industry. Section 16 would intensify such research efforts by the National Aeronautics and Space Administration and other Government agencies involved in atmospheric study. And as I have noted, section 16, in addition to providing for research, empowers the Administrator of the Environmental Protection Agency to regulate the manufacture and distribution of halocarbons whenever the scientific evidence warrants such action. Accordingly, as the Public Works Committee Report notes, section 16 provides for timely and appropriate regulatory action if needed, but avoids "the economic and social dislocations which would result from a preemptory ban."

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#### THE OZONE PROBLEM—A TIMETABLE FOR ACTION

Mr. McINTYRE. For 2 years prestigious scientists have been sounding the alarm about the release of billions of pounds of fluorocarbons into the atmosphere. In testimony before congressional committees and at scientific conferences, these scientists have warned repeatedly that the chemical is causing partial destruction of the earth's protective ozone shield. The result, they say, could be an increase in ultra-violet radiation, potential disruption of the food chain and global weather conditions, and an increase in thousands of cases of skin cancer.

These predictions have caused widespread concern in the chemical manufacturing industry, in Congress and State legislatures, and in the Federal agencies charged with protecting the health and welfare of our people.

The culprit in the early findings is an inert, colorless, tasteless, and odorless gas which is used as the propellant in more than half the aerosol sprays manufactured in this country. Best known under the name Freon 11 and 12, whose trademark is owned by E. I. du Pont de Nemours & Co., fluorocarbons are also produced by five other American companies.

Highly capital intensive, the chemical is manufactured at only 14 plants throughout the country with about 4,000 people directly holding jobs in fluorocarbon manufacturing, sales, and research. The annual payroll is estimated at about \$80 million. According to Business Week, Du Pont says its fluorocarbon business accounts for only 1 per-

cent of its \$7 billion annual sales, or about \$70 million annually. According to the Commerce Department, Du Pont—the Nation's largest manufacturer of fluorocarbons—has also captured 25 percent of overseas sales.

Worldwide production approaches 2.3 billion pounds including about 1 billion pounds in the United States of which roughly 500 million pounds is used in aerosol sprays. Fluorocarbons are also used in a host of other products. For example, air conditioners in homes, businesses, and automobiles, refrigerators and freezers all use the chemical as a coolant. It is used as a blowing agent in making styro-foam coffee cups or insulation for houses, boats or railroad cars, or in making stuffing for chairs or cushions and to make plastic furniture. Fluorocarbons are an ingredient in many fire extinguishers and cleaning fluids and solvents to clean electronic equipment.

But its major use in this country, of course, is as a propellant by the millions of pounds in aerosols for everything from deodorants to hair sprays, polishes, medicines, and waxes. As a result of its widespread use—concentrated in personal care products such as underarm sprays—fluorocarbons from aerosols are the major source of emissions. An outright ban on the use of fluorocarbon propellants would reduce emission levels by about one-half, bringing those levels back to the amounts manufactured in the early 1960's. Indeed, use of fluorocarbons has skyrocketed in the last 10 years. Back in 1958, only 175 million pounds of the chemical was manufactured in the United States. And as a result of the long lifetimes of fluorocarbon molecules, ground level emissions of 10 and 15 years ago are only now reaching the stratosphere. Many billions of pounds of fluorocarbons are in use as a coolant in refrigerators and freezers and will not begin the long rise to the stratosphere until the units are discarded and the chemical leaks into the atmosphere.

The enormous amounts of the chemical being emitted into the atmosphere attracted the interest of a number of scientists both in industry and in private research at universities here and abroad. Congressional hearings were held as long ago as 1974 and the warnings were very serious indeed. We have been told, for example, that fluorocarbons may be eroding the capacity of the ozone layer to absorb ultraviolet radiation as a result there may be 30,000 new skin cancer cases by 1990.

The fear is that this man-made chemical is so stable that it does not interact with the environment until it reaches the stratosphere some 10 to 30 miles above the Earth. Scientists such as Dr. F. Sherwood Rowland of the Department of Chemistry at the University of California believe that fluorocarbons are already causing at least a 1 percent average depletion of ozone. They say that fluorocarbon molecules, under the influence of ultraviolet radiation, are broken down into free chlorine atoms which then decrease gradually the average concentration of ozone by means of catalytic chain reactions.

These sobering warnings have prompted a number of responses in the industrial and public sectors. Millions of dollars are being spent on research by fluorocarbon manufacturers. Some companies are turning to alternatives in packaging not dependent on fluorocarbon propellants. Gillette Co. recently announced a decision to market hair spray in a pump-type dispenser. Roll-on applicators and pumps are

being used for other personal products and Johnson Wax of Racine, Wis., decided to eliminate fluorocarbon propellants entirely from its aerosol products. Consumer groups have been waging an antiaerosol campaign, claiming they are 60 to 70 percent propellant and not cost effective.

In other actions, an increasing number of State legislatures and municipalities have begun consideration of bans on fluorocarbons in aerosols. Oregon chose not to wait for Federal action and passed a law to ban fluorocarbon 11 and 12 in sprays effective March 1, 1977.

In addition, the National Academy of Sciences is studying the problem and a Federal task force released a report nearly a year ago based on the findings of 13 Government agencies and one interagency committee. The report concluded that the ozone depletion theory is "legitimate cause for concern."

The 109-page report also said that unless new scientific evidence is found to remove the cause for concern, fluorocarbons should be restricted after January 1, 1978, to replacement fluids in existing refrigeration and air-conditioning equipment and to closed recycled systems or other uses not involving release to the atmosphere. In short, they would ban use of fluorocarbons in aerosol sprays beginning January 1, 1978.

Dr. Warren Muir, cochairman of the Federal Interagency Task Force on the Inadvertent Modification of the Stratosphere, has concluded:

In light of all the evidence available to us and the most recent scientific findings we are reinforced in our preliminary assessment and continue to firmly support the conclusions and recommendations of our report . . . that the validity of the theory and the predicted amounts of ozone reduction have not been seriously challenged.

Ms. Carroll Leslie Pegler, cochairperson of the IMOS Task Force, said:

The current opinion of the Executive Branch of the Federal Government is that the reduction in average ozone concentration due to the release of certain fluorocarbon compounds, if it is occurring as predicted, is a serious problem with serious environmental and human health consequences.

One of the early researchers into the ozone problem, Dr. Ralph J. Cicerone of the Space Physics Laboratory at the University of Michigan, has said the following:

I recommend that aerosols be banned as quickly as possible. I base that on three factors. One is my reading and other scientists' reading of the evidence. The second factor is frankly my personal sense of values; that these (aerosols) are non-essential uses of these chemicals. The third factor is that over half of the fluorocarbons 11 and 12 are used in aerosol containers, so that this is over half the problem.

Last April, months before the IMOS report was completed, I said in a long statement to the Senate that it is the "timebomb" quality of the ozone depletion problem that has convinced me we must be ready to move—and move fast—with restrictions on fluorocarbons if the early warnings are further substantiated.

The evidence indicates there is a 10- to 15-year period before fluorocarbons released at ground level reach the stratosphere to interact with ozone. In addition the scientists say the process is irreversible. And they warn that there is enough of the chemical en route to the ozone

layer to cause serious depletion of the ozone shield by 1985 or 1990—even if all discharges were stopped today.

On the other hand there are reputable scientists who argue on behalf of industry that not enough is known about ozone depletion to say with certainty how great a depletion will occur. They urge a go-slow approach with more scientific studies to measure, for example, the lifetime of fluorocarbons in the lower atmosphere and the total amount of chlorine reaching the stratosphere.

Most of us are not scientists and thus it is clear we must rely on the best available evidence in making a decision on the best course of action. For that reason I have been working for more than a year to shape legislation which will provide a mechanism for restrictions on the use of fluorocarbons—if necessary.

The amendment sponsored by my colleague Senator Bob Packwood of Oregon, myself, and a number of other Senators, is consistent with this goal when viewed in relation to the other provisions of the ozone protection section of the Clean Air Act Amendments of 1976. Those provisions will make possible a coordinated examination of the scientific warnings in-depth research reports this year and again in October of 1977. Moreover, the research program must be followed by a deadline for action on this problem and it is for that reason that I believe the Packwood amendment is a more responsible alternative than the regulation section agreed to by the Senate Public Works Committee by a 9-5 vote. [See Secs. 150-159]

I hope we will not see substantiating evidence that fluorocarbons do cause average ozone depletion, causing increased incidence of skin cancer and possible changes in the Earth's weather and ecology. But I also believe it would be highly irresponsible for Congress to refuse to set in motion a mechanism to provide appropriate action should the theory be confirmed in subsequent research.

Now I am sure all of us have been exposed to the industry's claim that the Packwood amendment would impose a so-called "negative burden of proof" requiring industry to disprove the ozone depletion theory. The fact is that under the proposed legislation the Administrator of the Environmental Protection Agency would coordinate a number of investigations to study the scientific data and determine if no significant risk exists. Under the Packwood amendment, the EPA Administrator would waive restrictions on use of fluorocarbons if no significant risk exists. On the other hand, a decision that restrictions are necessary would constitute a finding—after exhaustive study—that a significant risk does exist. Such a finding would constitute a need for a ban on fluorocarbons in aerosols and those restrictions—under our amendment—would go into effect on January 1, 1978, although subject to modification by the EPA Administrator to accommodate any new evidence or provide for essential uses to benefit public health or welfare.

In contrast, the provisions in the committee bill make no allowance for smallscale essential uses. In addition, there is the possibility the EPA Administrator could choose an inadequate response, despite the evidence. Under the committee's approach, either branch of the Congress could then veto the proposal, or, the Congress would be forced to live with an unsatisfactory proposal because to disapprove the regulations would eliminate any action.

Such an approach would invite unnecessary confusion and thwart a timely resolution of this problem. It would legislate the possibility of delay when the facts may warrant a strong and timely response.

I believe the Packwood amendment overcomes those obstacles by providing a responsible and responsive mechanism for action based on exhaustive studies and research. It responds to the people's need for responsible action by Members of Congress. It would give manufacturers time to develop safe substitutes for fluorocarbon propellants. It would give State legislatures and local municipalities a clear signal that action will be taken—if needed—and discourage a crazy-quilt, patchwork series of State and local regulations which would be a nightmare for businessmen and consumers alike.

As I told the Senate more than a year ago, we have a unique opportunity to ask ourselves what we want to see happen in our world. With judicious use of our votes we can seize the opportunity to structure a systematic method of research followed by a deadline for action so that future generations can say they like what is happening in their world.

I ask that the text of the amendment being sponsored by myself, Senators Packwood, Bumpers, Gary Hart, Brooke, Hathaway, Hatfield, Abourezk, Hollings, and Leahy be printed in the Record to be followed by articles from the June 30 issue of the Wall Street Journal and the April 5 issue of Business Week.

On pages 58 and 59, strike section 153 and insert in lieu thereof the following:  
 "SEC. 153. (a) On and after January 1, 1978, except as provided in subsection (b), it shall be unlawful for any person to manufacture, produce, import, or export from the United States, aerosol containers containing halocarbons.

"(b) The Administrator shall consider the available reports, consult with appropriate Federal agencies and scientific entities, and afford the opportunity for public hearing, and if he then—

"(1) finds that no significant risk to the public health, safety, or welfare is, or may be posed by the discharge of halocarbons into the ambient air from aerosol containers, then he may, by rule, modify or rescind the prohibition in section 153(a) in whole or in part consistent with that finding, or

"(2) determines that a particular use of halocarbons in aerosol containers is essential for the public health or welfare and an adequate substitute for halocarbons is not available, he may grant specific exemptions from the prohibitions of this section to allow the use of small quantities in such situations.

"(c) From time to time the Administrator may revise any of the regulations issued pursuant to this section in the light of new evidence as to the need for such regulations.

(d) Nothing in this section shall limit, restrict, or otherwise detract from the authority provided in section 154 of this Act, or any authority under the Consumer Product Safety Act.

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[From The Wall Street Journal, June 30, 1976]

[See p. 12300, CR 7/23]

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[From Business Week, April 5, 1976]

#### AEROSOLS: THE MOMENT OF TRUTH DRAWS NEAR

The ax that has hovered over the \$500-million fluorocarbon industry seems ready to deliver its death blow. The National Academy of Sciences has completed its long-awaited study on whether fluorocarbons, more correctly called chlorofluorocarbons and used mainly as propellants for aerosol sprays, pose a threat to the earth's protective ozone layer. The NAS is delaying release of the report by a month so that it can evaluate "new and major pieces of information"

that it says have just come in over the transom, but some copies of the report have "leaked." And the consensus among scientists who have seen them is that the NAS data will severely damage the "innocent-until-proven-guilty" stance that fluorocarbon suppliers have fought for.

In fact, some users have already handed down their "guilty" verdicts. The industry was dealt a severe psychological blow last year when S. C. Johnson & Son announced a switch to hydrocarbon propellents for its spray polishes. Now more fluorocarbon users are preparing to abandon the product. "We used to have some products that were only available in aerosol dispensers, but now everything is also offered in non-aerosol forms," says a spokesman for Gillette Co., one of the heaviest fluorocarbon users. And the Environmental Protection Agency has recommended that pesticides be packaged in nonaerosol containers.

#### A BIG LOSER

This turn of events is bad news for E. I. du Pont de Nemours & Co. Although Du Pont says that its fluorocarbon business accounts for only 1% of its \$7 billion annual sales, which would make it \$70 million, a recent Commerce Dept. study indicates a \$250 million fluorocarbon market for Du Pont in the U.S. alone. Moreover, Commerce says that Du Pont has also captured 25% of overseas sales.

The fluorocarbon business is clearly important to Du Pont, no matter which figure is correct. The company has spent more than \$5 million to find alternatives for its Freon 11 and 12, the most commonly used fluorocarbons in aerosols. "The more we research the alternatives, the better the existing product proves to be," claims Donald R. Strobach, senior research chemist.

Still, Du Pont is girding for what it sees as an inevitable ban. Last year it ceased all new-product development for fluorocarbons and ordered its 12-person fluorocarbon technical staff to study alternatives. Strobach says the researchers will present their plans to Du Pont management next month, and he concedes that there are some promising alternatives.

Roy L. Schuyler, vice-president and general manager of Du Pont's organic chemicals department, claims that Du Pont scientists began "wondering what was happening to fluorocarbons in the atmosphere" as much as six years ago. Still, the safety of the chemicals was not publicly questioned until 1974.

At that time, two University of California chemists published a paper charging that fluorocarbon molecules float up into the stratosphere, where ultraviolet rays liberate their chlorine atoms (BW-Feb. 17, 1975). The chlorine then reacts with ozone to form oxygen, which does not have ozone's capacity to filter out harmful solar radiation. There is the suspicion that the subsequent thinning of the ozone layer leads to increased skin cancer and even climatic changes.

#### THE DATA

At least 55 studies, financed by industry, universities, and government, are now being pressed. Most of the data unearthed so far suggest that fluorocarbons do deplete ozone. There is no longer any question that they reach upper atmospheric levels. And although aerosols are still the main culprit, the danger of fluorocarbons used as refrigerants, their other main application, has also come to light. A recent Arthur D. Little study indicates that aerosols account for about 62% of the fluorocarbons released into the atmosphere, while refrigerants leak about 25%.

Most fluorocarbon backers had previously contended that refrigerants could be syphoned off easily when refrigerators and other cooling devices are discarded. But now Du Pont and others admit that it would require the use of heavy pressurized equipment to pump out the fluorocarbon coolants, and that this is not feasible.

The industry, however, is not ready to wave the white flag. The Manufacturing Chemist Assn., for example, has conceded that fluorocarbons "are currently believed to affect stratospheric ozone," but it quarrels with the extent of the effect. "The important question is one of quantity," MCA spokesmen advised the more years of scientific studies should be completed before federal agencies ban NAS panel on atmospheric chemistry. The chemical industry insists that two fluorocarbons.

It seems unlikely that they will get this much time. "Unless the predictions change substantially, there is reason to believe that the amount of eventual reduction in average ozone concentration resulting from fluorocarbons is unacceptable," states Warren R. Muir, cochairman of a 14-agency federal task

force on fluorocarbons. Thus far the EPA is the only agency with regulatory jurisdiction over aerosol products to take a stand. But the Food & Drug Administration and the Consumer Product Safety Commission have been bombarded with petitions from environmental groups, such as the Natural Resources Defense Council. The two agencies say that they will move when the NAS study and recommendations are completed.

#### ALTERNATIVES

Du Pont may have an ace in the hole if the predicted bans become reality. According to Strobach, the company is researching a prime contender to fill the production gap. He says that adding an extra hydrogen molecule to the fluorocarbon molecule would cause the total molecule to break apart before it reaches the ozone layer. For some in refrigerants, Strobach says, Du Pont is eyeing Freon 22, a much heavier fluorocarbon that is not suspected of damaging ozone.

With at least some alternatives on the horizon, Du Pont has been able to take a more fatalistic attitude than other MCA members. "We have thrown ourselves on the mercy of uncommitted scientists, and if they shift to the 'ban it' group's position, we'll go along with it," Strobach says. "We will let scientific opinion rule."

Mr. RIBICOFF. Connecticut has the second most severe problem in the country for photochemical oxidants, which are primarily caused by motor vehicles. This pollution often exceeds Federal standards established to guard the public health throughout the State of Connecticut. Some claim that this pollution is based in New York and New Jersey. I am advised, however, that even if these two States were to disappear, Connecticut would still be in violation of Federal health standards for smog and carbon monoxide.

Through the efforts of citizen groups, the Connecticut Department of Environmental Protection and certain industries, some progress has been made to improve air quality in my State. Since 1971, for example, the annual levels of sulfur dioxide have been reduced almost 50 percent in many areas of Connecticut. During the same period particulate levels have been reduced by almost 25 percent. Although these are important developments, much more needs to be done, not only in my region of the United States but throughout the Nation.

Positive and meaningful initiatives must be undertaken to improve the air we breathe and to provide effective protection of our country's air resources.

The measure now before us—S. 3219—is a comprehensive bill designed to improve the country's air by the end of this decade.

There are, however, a number of shortcomings in this legislation which must be corrected if it is to achieve substantive results.

One defect, for example, is the substantial relaxation of the automobile emission standards required for cars produced in 1978 and afterward. However, data is available which proves that not only can existing standards be met but significant fuel economy can be realized as well. I believe it would be a serious mistake to postpone from 1978 to 1979 the imposition of strict standards for hydrocarbons and carbon monoxide and to delay until 1980 a nitrogen oxide emission standard which is six times weaker than levels now being achieved in California under a stricter law. We have proof that auto manufacturers can meet and surpass current auto emission standards with an increase in gas mileage at the same time. I, therefore, encourage our colleagues to support the proposed amendments of the gentleman from Colorado, Mr. Gary Hart, which will modify the automobile emission section of the bill to guarantee adequate public health protection.

On the other hand, some pending amendments could gravely damage whatever improvements in pollution control are proposed by this measure. Before hastily acting on these debilitating proposals we should bear in mind the results of a 1975 FEA poll in which 94 percent of the persons interviewed indicated they wanted clean air kept that way and desire to prevent the spread of air pollution to all parts of the Nation. This same poll dramatically revealed that three-quarters of the respondents said they would be willing to pay higher prices to pay for clean air.

One of the most controversial features of this bill is the provisions of section 6 which would protect relatively clean air from undue degradation. Some have charged that the nondegradation proposals will result in a nongrowth policy. However, some 16 States, including Connecticut, maintain that concentrations of air pollutants at or near secondary standards would produce such effects as to seriously threaten, if not destroy, their current economic base. I should also note that Connecticut was one of 20 States which joined the Sierra Club or submitted independent suits requesting the courts to require a nondegradation policy.

The issues before us in this legislation have broad potential ramifications. The original act provides essential safeguards against further deterioration of the quality of breathable air and sets up a timetable designed to reduce the most important forms of pollution.

94TH CONGRESS  
2D SESSION

Calendar No. 685

# S. 3219

[Report No. 94-717]

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## IN THE SENATE OF THE UNITED STATES

MARCH 29, 1976

Mr. MUSKIE, from the Committee on Public Works, reported the following bill; which was read twice and ordered to be placed on the calendar

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## A BILL

To amend the Clean Air Act, as amended.

1       *Be it enacted by the Senate and House of Representa-*  
2       *tives of the United States of America in Congress assembled,*

3       SECTION 1. (a) The third sentence of subsection (b) of  
4       section 105 of the Clean Air Act is amended to read as  
5       follows:

6       “No agency shall receive any grant under this section  
7       during any fiscal year when its expenditures of non-Federal  
8       funds for other than nonrecurrent expenditures for air pollu-  
9       tion control programs will be less than its expenditures were  
10      for such programs during the preceding fiscal year, unless  
11      the Administrator determines that a reduction in expendi-

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1 tures is attributable to a nonselective reduction in expendi-  
2 tures in the programs of all executive branch agencies of the  
3 applicable unit of government; and no agency shall receive  
4 any grant under this section with respect to the maintenance  
5 of a program for the prevention and control of air pollution  
6 unless the Administrator is satisfied that such grant will be so  
7 used to supplement and, to the extent practicable, increase  
8 the level of State, local, or other non-Federal funds that  
9 would in the absence of such grant be made available for the  
10 maintenance of such program, and will in no event supplant  
11 such State, local, or other non-Federal funds.”.

12 (b) Subsection (c) of section 105 of the Clean Air Act  
13 is amended by adding the following: “In fiscal year 1977 and  
14 subsequent fiscal years, subject to the provisions of subsec-  
15 tion (b) of this section, no State shall receive less than one-  
16 half of 1 per centum of the annual appropriation for grants  
17 under this section for grants to agencies within such State.”.

18 SEC. 2. Section 107 of the Clean Air Act is amended  
19 by adding a new subsection as follows:

20 “(d) (1) For the purpose of transportation control  
21 planning, prevention of significant deterioration, and for other  
22 purposes, each State, within one hundred and twenty days  
23 after the date of enactment of the Clean Air Amendments of  
24 1976, shall submit to the Administrator a list, together with a  
25 summary of the available information, identifying those air

## 3

1 quality control regions, or portions thereof, established pur-  
2 suant to this section in such State which on the date of enact-  
3 ment of the Clean Air Amendments of 1976—

4 “(A) do not meet a national primary ambient air  
5 quality standard for any mobile source related air  
6 pollutant;

7 “(B) do not meet, or in the judgment of the  
8 State may not in the time period required by an  
9 applicable implementation plan attain or maintain, any  
10 national primary ambient air quality standard for any  
11 pollutants other than those listed in subparagraph (A)  
12 of this paragraph through the application of measures or  
13 controls approved or promulgated pursuant to section  
14 110 of this Act;

15 “(C) do not meet a national secondary ambient air  
16 quality standard;

17 “(D) cannot be classified under subparagraph (B)  
18 or (C) of this paragraph on the basis of available infor-  
19 mation, for ambient air quality levels for sulfur oxides or  
20 particulate matter; or

21 “(E) have ambient air quality levels better than  
22 any national primary or secondary air quality standard  
23 other than for sulfur oxides or particulate matter, or for  
24 which there is not sufficient data to be classified under  
25 subparagraph (A) of this paragraph.

1       “(2) Not later than sixty days after submittal of the list  
2 under paragraph (1) of this subsection the Administrator  
3 shall promulgate each such list with such modifications as he  
4 deems necessary. Whenever the Administrator proposes to  
5 modify a list submitted by a State, he shall notify the State  
6 and request all available data relating to such region or por-  
7 tion, and provide such State with an opportunity to demon-  
8 strate why any proposed modification is inappropriate.

9       “(3) Any region or portion thereof which is not classi-  
10 fied under subparagraph (B) or (C) of paragraph (1) of  
11 this subsection for sulfur oxides or particulate matter within  
12 one hundred and eighty days after enactment of the Clean  
13 Air Amendments of 1976 shall be deemed to be a region  
14 classified under subparagraph (D) of paragraph (1) of  
15 this subsection.

16       “(4) A State may from time to time review, and as ap-  
17 propriate revise and resubmit, the list required under this sub-  
18 section. The Administrator shall consider and promulgate  
19 such revised list in accordance with this subsection.”.

20       SEC. 3. The first sentence of section 108 (b) (1) of the  
21 Clean Air Act is amended by striking the words “technology  
22 and costs of emission control” and inserting in lieu thereof  
23 the words “cost of installation and operation, energy re-  
24 quirements, air quality benefits, and environmental impact  
25 of the emission control technology.”

1        SEC. 4. Section 108 of the Clean Air Act is amended  
2 by adding new subsections as follows:

3        “(e) The Administrator shall, after consultation with  
4 the Secretary of Transportation and the Secretary of Housing  
5 and Urban Development and State and local officials and  
6 within one hundred and eighty days after the enactment of  
7 this subsection, and from time to time thereafter, publish  
8 guidelines on the basic program elements for the transporta-  
9 tion planning process assisted under subsection (h) of sec-  
10 tion 110 of this Act. Such guidelines shall include infor-  
11 mation on—

12            “(1) methods to identify and evaluate alternative  
13 planning and control activities;

14            “(2) methods of reviewing plans on a regular basis  
15 as conditions change or new information is presented;

16            “(3) identification of funds and other resources  
17 necessary to implement the plan, including interagency  
18 agreements on providing such funds and resources;

19            “(4) methods to assure participation by the public  
20 in all phases of the planning process; and

21            “(5) such other methods as the Administrator de-  
22 termines necessary to carry out a continuous planning  
23 process.

24        “(f) (1) The Administrator shall publish and make  
25 available to appropriate Federal agencies, States, and air

## 6

1 pollution control agencies, including agencies assisted under  
2 subsection (h) of section 110 of this Act, within six  
3 months after enactment of this subsection for clauses  
4 (i), (ii), (iii), and (iv) of subparagraph (A) and within  
5 one year after the enactment of this subsection for the bal-  
6 ance of this subsection (and from time to time thereafter),  
7 (A) information, prepared, as appropriate, in cooperation  
8 with the Secretary of Transportation, regarding processes,  
9 procedures, and methods to reduce or control each such pol-  
10 lutant, including but not limited to—

11 “(i) motor vehicle emission inspection and main-  
12 tenance programs;

13 “(ii) programs to control vapor emissions from fuel  
14 transfer and storage operations and operations using  
15 solvents;

16 “(iii) programs for improved public transit;

17 “(iv) programs to establish exclusive bus and car-  
18 pool lanes and areawide carpool programs;

19 “(v) programs to limit portions of road surfaces  
20 or certain sections of the metropolitan areas to the use  
21 of common carriers, both as to time and place;

22 “(vi) programs for long-range transit improvements  
23 involving new transportation policies and transportation  
24 facilities or major changes in existing facilities;

1           “(vii) programs to control on-street parking and  
2       new offstreet parking facilities;

3           “(viii) programs to construct new parking facilities  
4       and operate existing parking facilities for the purpose of  
5       park and ride lots and fringe parking;

6           “(ix) programs to limit portions of road surfaces  
7       or certain sections of the metropolitan area to the use  
8       of nonmotorized vehicles or pedestrian use, both as to  
9       time and place;

10          “(x) provisions for employer participation in pro-  
11       grams to encourage carpooling, vanpooling, mass transit,  
12       bicycling, and walking;

13          “(xi) programs for secure bicycle storage facilities  
14       and other facilities, including bicycle lanes, for the con-  
15       venience and protection of bicyclists, in both public and  
16       private areas;

17          “(xii) programs of staggered hours of work;

18          “(xiii) programs to institute road user charges, tolls,  
19       or differential rates to discourage single occupancy auto-  
20       mobile trips;

21          “(xiv) programs to control extended idling of  
22       vehicles;

23          “(xv) programs to reduce emissions by improve-  
24       ments in traffic flow;

1           “(xvi) programs for the conversion of fleet vehicles  
2       to cleaner engines or fuels, or to otherwise control fleet  
3       vehicle operations;

4           “(xvii) programs for retrofit of emission devices or  
5       controls on vehicles and engines, other than light duty  
6       vehicles, not subject to regulations under section 202  
7       of title II of this Act; and

8           “(xviii) programs to reduce motor vehicle emis-  
9       sions which are caused by extreme cold start conditions;

10       (B) information on additional methods or strategies that will  
11       contribute to the reduction of mobile source related pollutants  
12       during periods in which any primary ambient air quality  
13       standard will be exceeded during any extension under sub-  
14       section (h) of section 110 of this Act and during episodes  
15       for which an air pollution alert or emergency has been  
16       declared; (C) information on other measures which may be  
17       employed to reduce the impact on public health or protect  
18       the health of sensitive or susceptible individuals or groups;  
19       and (D) information on the extent to which any process,  
20       procedure, or method to reduce or control such air pollutant  
21       may cause an increase in the emissions or formation of any  
22       other pollutant.

23       “(2) In publishing such information the Administrator  
24       shall describe (A) the effectiveness of such processes, pro-  
25       cedures, and methods; (B) factors related to the costs and

1 benefits of such processes, procedures, and methods, in dif-  
2 ferent situations; (C) transportation factors related to such  
3 processes, procedures, and methods; (D) the environ-  
4 mental, energy, and economic impact of such processes, pro-  
5 cedures, and methods; and (E) his assessment of whether  
6 each such process, procedure, or method is reasonable for  
7 application to attain a primary ambient air quality standard.”.

8 SEC. 5. (a) Section 110 of the Clean Air Act is  
9 amended by adding a new sentence at the end of paragraph  
10 (1) of subsection (a) as follows:

11 “Each State shall adopt and submit to the Administrator  
12 within eight months after the date of enactment of the Clean  
13 Air Amendments of 1976, a revision of its implementation  
14 plan which provides for implementation, maintenance and  
15 enforcement of the provisions of subsection (g) of this sec-  
16 tion for the prevention of significant deterioration in each  
17 appropriate air quality control region (or portion thereof)  
18 within such State.”.

19 (b) Section 110(a) (2) (B) of the Clean Air Act is  
20 amended to read as follows:

21 “(B) it includes emission limitations, schedules, and  
22 timetables for compliance with such limitations, and, in  
23 addition, as may be necessary, (i) to assure attainment  
24 and maintenance of such primary or secondary standard,  
25 such other measures, including, but not limited, to trans-

1        portation controls, and enforceable supplemental emis-  
2        sion reduction strategies for existing nonferrous smelters,  
3        and (ii) land-use controls for the purpose of maintenance  
4        of, or to prevent further deterioration from, any primary  
5        ambient air quality standard: *Provided, however, That*  
6        land-use controls shall be included in an implementation  
7        plan only after consideration of the energy, environ-  
8        mental, and economic impacts of such controls;”.

9        (c) Section 110 (a) (2) (D) of the Clean Air Act is  
10       amended by inserting after “(D) it includes” and before “a  
11       procedure” the following: “a program to provide for the en-  
12       forcement of emission limitations and regulation of the modi-  
13       fication, construction, and operation of any stationary source,  
14       including a permit or equivalent program for any major emit-  
15       ting facility, within such region to assure (i) that national  
16       ambient air quality standards are achieved and maintained,  
17       (ii) that the requirements of subsection (g) of this section  
18       are met, and (iii)”.

19       (d) Section 110 (a) (2) (H) of the Clean Air Act is  
20       amended by striking “or” before “(ii)” and by striking the  
21       period and adding at the end thereof: “, or to incorporate the  
22       requirements of subsection (g) of this section; or (iii) to  
23       incorporate any additional requirements established under the  
24       Clean Air Amendments of 1976.”.

25       (e) Section 110 (a) (4) of the Clean Air Act is

1 amended by inserting after "primary or secondary stand-  
2 ard" the following: "or which will not comply with a stand-  
3 ard of performance under section 111, or which does not  
4 conform to the requirements of subsection (g) of this sec-  
5 tion,".

6 (f) Section 110 (d) of the Clean Air Act is amended  
7 by striking the period and inserting at the end thereof "and  
8 the requirements of subsection (g) of this section.".

9 SEC. 6. Section 110 of the Clean Air Act is amended by  
10 adding a new subsection as follows:

11 "(g) (1) Each implementation plan shall include re-  
12 quirements applicable to each region identified in the list  
13 promulgated pursuant to paragraph (1) (D) of subsection  
14 (d) of section 107 of this Act, which shall, in addition to  
15 the requirements of paragraphs (2), (3), (4), (5), and  
16 (6) of this subsection, provide:

17 "(A) for designation as class I areas of—

18 "(i) all international parks, and each national  
19 park, national wilderness area, and national memo-  
20 rial park which exceeds five thousand acres in size  
21 and which is in existence on the date of enactment  
22 of the Clean Air Amendments of 1976;

23 "(ii) each national park and national wilder-  
24 ness area established after the enactment of the Clean  
25 Air Amendments of 1976, unless the Federal Land

1           Manager and the State or States in which such lands  
2           are located agree to redesignate such areas as class  
3           II areas; and

4           “(iii) such other areas as the State (and, if  
5           appropriate, after notice and consultation with ad-  
6           jacent States) may designate, except that Federal  
7           lands may be so designated only with the concu-  
8           rence of the Federal Land Manager;

9           “(B) that all remaining areas in such State iden-  
10          tified under section 107 (d) (1) (D) of this Act and not  
11          designated class I pursuant to subparagraph (A) of this  
12          paragraph shall be designated as class II areas.

13          “(2) As it relates to the pollutants particulate matter  
14          and sulfur dioxide, the cumulative change in the air quality  
15          in any area designated under paragraph (1) of this sub-  
16          section resulting from the construction and operation of any  
17          new major emitting facility or facilities shall be limited to the  
18          following projected increases in pollutant concentrations over  
19          the baseline air quality concentration:

"Pollutant Particulate matter:	(In micrograms per cubic meter)
Annual geometric mean-----	10
Twenty-four-hour maximum-----	30
Sulfur dioxide:	
Annual arithmetic mean-----	15
Twenty-four-hour maximum-----	100
Three-hour maximum-----	700

20          “(3) Requirements applicable to an area designated as  
21          class I or class II shall include a management program to

1 assure that, in the event of the proposed construction of  
2 any major emitting facility in any such area, the construction  
3 of such facility shall be preceded by an analysis of the am-  
4 bient air quality, climate and meteorology, soils and vegeta-  
5 tion, and visibility at the site of the proposed facility and in  
6 the area potentially affected by the emissions from the pro-  
7 posed facility for each pollutant regulated under this Act  
8 which will be emitted from, or which results from the con-  
9 struction or operation of, such facility. Such analysis shall  
10 be included in any permit application required.

11 “(4) No major emitting facility on which construction  
12 is commenced after June 1, 1975, may be constructed in  
13 any area designated under this subsection—

14 “(A) unless a permit has been issued for such pro-  
15 posed facility in accordance with this section, setting  
16 forth emission limitations for such facility which conform  
17 to the requirements of this subsection,

18 “(B) unless the proposed facility is subject to the  
19 best available control technology for each pollutant sub-  
20 ject to regulation under this Act emitted from, or which  
21 results from, such facility,

22 “(C) unless the owner or operator of such facility  
23 demonstrates that emissions of particulate matter and  
24 sulfur oxides will not contribute to a cumulative change  
25 in the air quality in excess of that allowed in paragraph  
26 (2) of this subsection,

1           “(D) unless the provisions of paragraph (5) of  
2       this subsection with respect to protection of class I areas  
3       have been complied with for such facility,

4           “(E) unless there has been an analysis of any  
5       air quality impacts projected for the area as a result of  
6       growth associated with such facility, and

7           “(F) unless there has been opportunity for a public  
8       hearing conducted by a State on any proposed permit  
9       for such facility, with an opportunity for interested par-  
10      ties, including representatives of the Administrator, to  
11      appear and provide testimony on such facility, including  
12      alternatives thereto, and control technology require-  
13      ments.

14          “(5) (A) The State shall provide notice of any permit  
15      application to the Administrator and the Administrator  
16      shall provide notice of the permit application to the Federal  
17      Land Manager and the Federal official charged with direct  
18      responsibility for management of any lands within a class I  
19      area which may be affected by emissions from the pro-  
20      posed facility.

21          “(B) The Federal Land Manager and the Federal offi-  
22      cial charged with direct responsibility for management of  
23      such lands shall have an affirmative responsibility to protect  
24      the air quality related values of any such lands within a class  
25      I area and to consider, in consultation with the Administra-

1 tor, whether a proposed major emitting facility will have  
2 an adverse impact on such values.

3       “(C) In any case where the Federal official charged  
4 with direct responsibility for management of any lands  
5 within a class I area or the Federal Land Manager of such  
6 lands, or the Administrator, or the Governor of an adjacent  
7 State containing such a class I area files a notice alleging that  
8 emissions from a proposed major emitting facility may cause  
9 or contribute to a change in the air quality in such area and  
10 identifying the potential adverse impact of such change, a per-  
11 mit shall not be issued unless the owner or operator of such  
12 facility demonstrates that emissions of particulate matter and  
13 sulfur dioxide will not contribute to a cumulative change  
14 in air quality in excess of the following projected increases  
15 in pollutant concentrations over the baseline air quality  
16 concentration:

“Pollutant	(In micrograms per cubic meter)
Particulate matter:	
Annual geometric mean-----	5
Twenty-four-hour maximum-----	10
Sulfur dioxide:	
Annual arithmetic mean-----	2
Twenty-four-hour maximum-----	5
Three-hour maximum-----	25

17 *Provided*, That (i) in any case where the Federal Land  
18 Manager demonstrates to the satisfaction of the State that  
19 the emissions from such facility will have an adverse impact  
20 on the air quality-related values of such lands, notwithstand-  
21 ing the fact that the change in air quality resulting from

1 emissions from such facility will not exceed for such lands  
2 the limitations on projected increases established in this  
3 subparagraph, a permit shall not be issued, and (ii) in any  
4 case where the owner or operator of such facility demon-  
5 strates to the satisfaction of the Federal Land Manager, and  
6 the Federal Land Manager so certifies, that the emissions  
7 from such facility will have no adverse impact on the air  
8 quality related values of such lands, notwithstanding the  
9 fact that the change in air quality resulting from emissions  
10 from such facility will exceed for such lands the limitations  
11 on projected increases established in this subparagraph, the  
12 State may issue a permit.

13 “(6) For purposes of this subsection—

14 “(A) the term ‘best available control technology’  
15 means an emission limitation based on the maximum de-  
16 gree of reduction of each pollutant subject to regulation  
17 under this Act emitted from or which results from any  
18 major emitting facility, which the permitting authority,  
19 on a case-by-case basis, taking into account energy,  
20 environmental, and economic impacts and other costs,  
21 determines is achievable for such facility through ap-  
22 plication of production processes and available methods,  
23 systems, and techniques, including fuel cleaning or treat-  
24 ment, for control of each such pollutant. In no event shall  
25 application of ‘best available control technology’ result

1 in emissions of any pollutants which will exceed the  
2 emissions allowed by any applicable standard established  
3 pursuant to section 111 or 112 of this Act;

4 “(B) the term ‘Federal Land Manager’ means (i)  
5 the Secretary of the department with authority over  
6 any lands of the United States, and (ii) Indian tribes  
7 which have legal jurisdiction over tribal lands; and

8 “(C) the term ‘commenced’ as applied to construc-  
9 tion of a major emitting facility means that the owner or  
10 operator has obtained all necessary preconstruction ap-  
11 provals or permits required by Federal, State, or local  
12 laws or regulations and either has (i) begun, or caused  
13 to begin, a continuous program of physical on-site con-  
14 struction of the facility or (ii) entered into binding  
15 agreements or contractual obligations, which cannot be  
16 canceled or modified without substantial loss to the  
17 owner or operator, to undertake a program of construc-  
18 tion of the facility to be completed within a reasonable  
19 time: *Provided*, That in the case of a facility on which  
20 construction was commenced in accordance with this  
21 definition after June 1, 1975, and prior to the enact-  
22 ment of the Clean Air Amendments of 1976, the re-  
23 view and permitting of such facility shall be in accord-  
24 ance with the regulations for the prevention of significant

1 deterioration in effect prior to the enactment of the  
2 Clean Air Amendments of 1976.

3 “(7) (A) Until a revision of the implementation plan  
4 in accordance with this subsection is submitted and approved,  
5 significant deterioration for those pollutants covered by such  
6 regulations shall be regulated pursuant to applicable regula-  
7 tions and procedures for prevention of significant deteriora-  
8 tion established under authority of the Clean Air Act in  
9 effect prior to the enactment of the Clean Air Amendments  
10 of 1976, except as those regulations provide for designations  
11 of nondeterioration areas which allow increases in emissions  
12 of air pollutants or any reduction in air quality inconsistent  
13 with paragraphs (1) and (2) of this subsection, or do not  
14 require the degree of control required by paragraph (6) (A)  
15 of this subsection, or are otherwise inconsistent with the re-  
16 quirements of this subsection.

17 “(B) For the purpose of this section any State may sub-  
18 mit the revision to its implementation plan relating to the  
19 prevention of significant deterioration which has been  
20 adopted for such State as of the date of enactment of the  
21 Clean Air Amendments of 1976. Such requirements shall  
22 be the requirements applicable to such State under this sec-  
23 tion unless the Administrator finds that such requirements  
24 or a portion thereof are inconsistent with the requirements  
25 of this subsection and notifies the State of such inconsistency.

1       “(8) The Administrator shall study strategies to con-  
2     trol pollutants not covered by paragraph (2) of this sub-  
3     section in order to prevent significant deterioration of air  
4     quality for such pollutants and shall report to the Congress  
5     within one year after the date of enactment of the Clean Air  
6     Amendments of 1976 recommending control strategies for  
7     such pollutants. Such report shall recommend increments, as  
8     appropriate, for class I and class II areas applicable to the  
9     emissions from stationary sources of nitrogen oxides, hydro-  
10    carbons, and such other pollutants and control strategies as  
11    the Administrator determines to be appropriate.

12       “(9) The Administrator shall, and a Governor may,  
13    take such measures under section 113 or 304 of this Act,  
14    including seeking injunctive relief, as necessary to prevent  
15    the issuance of a permit under this subsection or the con-  
16    struction of a major emitting facility which does not conform  
17    to the requirements of paragraphs (4) and (5) of this  
18    subsection.

19       “(10) In the event any State adjacent to a State subject  
20    to the requirements of this subsection disagrees with the des-  
21    ignation of any class I area in the State subject to the require-  
22    ments, or if a permit is proposed to be issued for any new  
23    major emitting facility proposed for construction in an adjoining  
24    State which the Governor of the affected State determines  
25    will cause or contribute to a cumulative change in air quality

1 in excess of that allowed in this subsection in any class I or  
2 class II area within the affected State, the Governor may  
3 request the Administrator to enter into negotiations with the  
4 States involved to resolve such dispute. If requested by any  
5 State involved, the Administrator shall make a recommenda-  
6 tion to resolve the dispute and protect the air quality related  
7 values of the lands in such State. If the States involved do  
8 not reach agreement, the Administrator shall resolve the dis-  
9 pute and his determination, or the results of agreements  
10 reached through other means, shall become part of the ap-  
11 plicable plan and shall be enforceable as part of such plan.

12 “(11) Notwithstanding paragraphs (2), (4), and  
13 (5) of this subsection, in no instance shall the Adminis-  
14 trator approve any requirements or revision of any imple-  
15 mentation plan, nor shall any permitting authority issue a  
16 permit under this subsection for a new major emitting facility,  
17 which would allow for the deterioration of air quality to a  
18 level that would exceed any national ambient air quality  
19 standard.

20 “(12) Nothing in this subsection shall alter or affect  
21 section 116 of this Act.”.

22 SEC. 7. Section 110 of the Clean Air Act is amended by  
23 adding subsection (h) as follows:

24 “(h) (1) Upon application by the Governor of a State  
25 on or after June 1, 1976, the Administrator may extend

1 for not more than five years the deadline for attainment of  
2 national primary ambient air quality standards required  
3 under this section where transportation control measures are  
4 necessary for the attainment of such standards and where  
5 the implementation of such control measures by the date  
6 established in existing implementation plans would have  
7 serious adverse social or economic effects.

8 “(2) The Administrator may consider extension appli-  
9 cations for only those air quality control regions in which  
10 the State has:

11 “(A) implemented or will have implemented by  
12 June 1, 1977, (i) the requirements of the applicable  
13 implementation plan with respect to stationary source  
14 emissions of transportation-related pollutants, and (ii)  
15 implemented or will have begun implementing by June 1,  
16 1977, all reasonably available measures of the appli-  
17 cable transportation control plan which do not have seri-  
18 ous adverse social or economic effects; and

19 “(B) completed, or agreed to complete by June 1,  
20 1978, a detailed planning study that evidences public and  
21 local governmental involvement in accordance with  
22 paragraph (7) of this subsection and includes (i) exam-  
23 ination of alternative measures and combinations of  
24 measures to attain and maintain the standards after  
25 June 1, 1977, (ii) a description of projects to be under-

1 taken together with timetables and resource require-  
2 ments, and (iii) identification and analysis of social, eco-  
3 nomic, and environmental effects including public health  
4 and energy conservation effects of such measures and  
5 projects.

6 “(3) Each extension application shall be accompanied  
7 by adequate documentation of compliance with the require-  
8 ments of paragraph (2) above, and shall include a descrip-  
9 tion of the process for the development of an implementation  
10 plan for the extension period requested. Such plan shall be  
11 submitted no later than June 1, 1978. The plan shall at a  
12 minimum:

13 “(A) identify the remaining emission reductions  
14 necessary for attainment of the national primary ambient  
15 air quality standards and the additional reasonably  
16 available measures to be implemented to accomplish  
17 these reductions;

18 “(B) provide for the implementation of all reason-  
19 ably available control measures as expeditiously as  
20 practicable;

21 “(C) identify the financial and manpower resources  
22 to be committed to carrying out the plan;

23 “(D) include written evidence that the State, the  
24 general purpose local government or governments, or a  
25 regional agency designated by general purpose local gov-

1       ernments for such purpose, have adopted by statute,  
2       regulation, ordinance, or other legally enforceable docu-  
3       ment, the necessary requirements and schedules and  
4       timetables for compliance, and are committed to imple-  
5       ment and enforce the appropriate elements of the plan;

6       “(E) demonstrate (i) attainment of the national  
7       primary ambient air quality standards as expeditiously  
8       as practicable, but no later than May 31, 1982, or (ii)  
9       that such attainment is not possible within the extension  
10      period prior to May 31, 1982, despite implementation  
11      of all reasonably available control measures.

12      “(4) (A) Within one hundred and twenty days follow-  
13      ing the submission of an application and all supporting mate-  
14      rials, and after providing an opportunity for public hearing,  
15      the Administrator shall grant an extension, unless he deter-  
16      mines that the requirements of this subsection have not been  
17      met.

18      “(B) If the Administrator determines that the require-  
19      ments of this subsection have not been met, including find-  
20      ings relating to the impacts of the transportation control  
21      measures upon the social, economic, energy conservation,  
22      and environmental welfare of the air quality control region,  
23      he shall notify the Governor of deficiencies in the application,  
24      including his judgment as to acceptable dates for implement-  
25      ing measures included in the plan and as to the appropriate

1 duration of an extension. The notification shall also specify a  
2 date for the submission of a revised application.

3 “(5) Where the Administrator grants an extension  
4 based on an application meeting the requirements of  
5 paragraph (3) (E) (ii) of this subsection, the Governor of  
6 the State may, on or after June 1, 1981, apply for a further  
7 extension in accordance with and subject to the requirements  
8 of this subsection. No extension under this paragraph or  
9 other portion of this Act may extend beyond May 31, 1987.

10 “(6) (A) Where the Administrator denies an extension  
11 application or where the Governor of a State in which the  
12 national primary ambient air quality standards are not being  
13 met does not submit an application or revised application  
14 under this subsection, the Administrator shall, after consulta-  
15 tion with appropriate State and local elected officials and  
16 after opportunity for public hearing in the affected State if  
17 no such hearing has been previously held, propose and  
18 promulgate an implementation plan (or portion thereof)  
19 meeting the requirements of this subsection. In proposing  
20 and promulgating such plan, the Administrator shall comply  
21 with the time requirements and schedules of this subsection.  
22 The United States court of appeals for the appropriate cir-  
23 cuit may grant a stay of any provision of such plan upon  
24 application by a State pursuant to section 307 of this Act.  
25 “(B) The Administrator may delegate the implementa-

1 tion or enforcement of any portion of a promulgated plan to  
2 one or more general purpose local governments or a State.

3 “(7) (A) The implementation plan required by para-  
4 graph (3) of this subsection shall be prepared in consulta-  
5 tion with elected officials of local governments in the af-  
6 fected area, and where possible by an organization of elected  
7 officials of local governments recognized or designated by the  
8 State for this purpose. Where feasible, such organization  
9 shall be the metropolitan planning organization designated to  
10 conduct the continuing, cooperative and comprehensive  
11 transportation planning process for the area under section  
12 134 of title 23, United States Code, or the organization  
13 responsible for the air quality maintenance planning process  
14 under regulations implementing this section, or the orga-  
15 nization with both responsibilities.

16 “(B) The preparation of the implementation plan re-  
17 quired by paragraph (3) of this subsection shall be coordi-  
18 nated with the continuing, cooperative, and comprehensive  
19 transportation planning process required under section 134  
20 of title 23, United States Code, and the air quality mainte-  
21 nance planning process required under this section, and such  
22 planning processes shall take into account the requirements  
23 of this subsection.

24 “(8) (A) The Administrator shall make grants to any  
25 organization of local elected officials with transportation or

1 air quality maintenance planning responsibilities recognized  
2 by the State under paragraph (7) of this subsection for  
3 payment of the reasonable costs of developing an air quality  
4 transportation control plan under this section.

5 “(B) The amount granted to any organization under  
6 subparagraph (A) of this paragraph shall be 100 per centum  
7 of any additional costs of developing an air quality trans-  
8 portation control plan under this section for the first two  
9 fiscal years following receipt of the grant under this para-  
10 graph, and shall supplement any funds available under Fed-  
11 eral law to such organization for transportation or air quality  
12 maintenance planning. Grants under this paragraph shall not  
13 be used for construction.

14 “(9) (A) The Administrator shall not approve any  
15 projects or award any grants authorized by this Act or any  
16 other authority of the Administrator after June 1, 1977, in  
17 any State in which any primary ambient air quality standard  
18 has not been attained, where transportation control measures  
19 are necessary for the attainment of such standard and the  
20 Governor has not applied for an extension in accordance  
21 with this subsection, or where the Governor has not sub-  
22 mitted an implementation plan by June 1, 1978.

23 “(B) In any area in which the State or, as the case  
24 may be, the general purpose local government or govern-  
25 ments or any regional agency designated by such general

1 purpose local governments for such purpose, is not imple-  
2 menting any requirement of an approved or promulgated  
3 plan under this section, including any condition of the ex-  
4 tension under paragraph (2) of this subsection, the Admin-  
5 istrator shall decrease funds or grants for any projects  
6 authorized by any authority of the Administrator by fifteen  
7 per centum for each year during the period any such re-  
8 quirement is not being implemented.

9 “(10) (A) No department, agency, or instrumentality  
10 of the Federal Government shall (i) engage in, (ii) support  
11 in any way or provide financial assistance for, (iii) license or  
12 permit, or (iv) approve, any activity which does not con-  
13 form to a plan after it has been approved or promulgated  
14 under this section. No metropolitan planning organization  
15 designated under section 134 of title 23, United States Code,  
16 shall give its approval to any project, program, or plan  
17 which does not conform to a plan approved or promulgated  
18 under this section. The assurance of conformity to such a  
19 plan shall be an affirmative responsibility of the head of such  
20 department, agency, or instrumentality.

21 “(B) Each department, agency, or instrumentality of  
22 the Federal Government having authority to conduct or sup-  
23 port any program with air-quality related transportation  
24 consequences shall give priority in the exercise of such au-  
25 thority, consistent with statutory requirements for allocation

1 among States or other jurisdictions, to the implementation  
2 of those portions of plans prepared under this section to  
3 achieve and maintain the national primary ambient air qual-  
4 ity standard. This paragraph extends to, but is not limited to,  
5 authority exercised under the Urban Mass Transportation  
6 Act, as amended, title 23 of the United States Code, and  
7 the Housing and Urban Development Act, as amended.”

8 SEC. 8. The Clean Air Act is amended by adding a  
9 new subsection (e) to section 112 as follows:

10 “(e) For purposes of this section the Administrator  
11 may promulgate a hazardous emission standard in terms of  
12 a design, equipment, or operational standard if he determines  
13 that such standard is necessary to control emissions of a  
14 hazardous pollutant or pollutants because, in the judgment of  
15 the Administrator, they cannot or should not be emitted  
16 through a conveyance designed and constructed to emit or  
17 capture such pollutants.”.

18 SEC. 9. (a) Section 113 of the Clean Air Act is amended  
19 by adding the following new subsection:

20 “(d) (1) A State (or, after thirty days notice to the  
21 State, the Administrator) may issue an enforcement order  
22 for any stationary source which specifies a date for final com-  
23 pliance with an applicable emission limitation later than the  
24 date for attainment of any national ambient air quality stand-  
25 ard specified in the applicable implementation plan: *Pro-*

1 *vided*, That (A) such order is issued after notice to the public  
2 (and, as appropriate, to the Administrator) containing the  
3 content of the proposed order and opportunity for public  
4 hearing; (B) the order contains a schedule and timetable for  
5 compliance; (C) the order contains any interim control  
6 measures the State (or the Administrator) deems to be  
7 reasonable, and the order requires the emission monitoring  
8 and reporting by the source authorized to be required under  
9 sections 110(a)(2)(F) and 114(a)(1); (D) the order  
10 provides for final compliance with the emission limitation  
11 in the applicable implementation plan as expeditiously as  
12 practicable, but in no event later than January 1, 1979;  
13 and (E) in the case of a major emitting facility, the order  
14 provides that it will be amended no later than January 1,  
15 1978, to contain a provision requiring the source to pay  
16 monthly a delayed compliance penalty, in an amount equal  
17 to that sum established by the Administrator pursuant to  
18 section 120 of this Act, in the event such major emitting  
19 facility fails to comply by January 1, 1979.

20       “(2) An enforcement order proposed by a State shall  
21 issue under this subsection unless the Administrator, within  
22 ninety days of receipt of any proposed order, objects in  
23 writing to the issuance of such order as not consistent with  
24 the requirements of paragraph (1) of this subsection. If  
25 the Administrator so objects, he shall simultaneously pro-

1 ceed to issue an enforcement order in accordance with this  
2 subsection. Nothing in this section shall be construed as  
3 limiting the authority of a State or political subdivision to  
4 adopt and enforce a more stringent emission limitation or  
5 more expeditious schedule or timetable for compliance than  
6 that contained in an order by the Administrator.

7       “(3) If any source not in compliance with an emission  
8 limitation in an applicable implementation plan gives written  
9 notification to the State (or the Administrator) that such  
10 source intends to comply by means of replacement of the fa-  
11 cility, a complete change in production process, or a termina-  
12 tion of operation, the State (or the Administrator) may issue  
13 an order under paragraph (1) of this subsection permitting  
14 the source to operate until January 1, 1979, without any  
15 interim schedule of compliance: *Provided*, That as a con-  
16 dition of such issuance, the owner or operator of such source  
17 shall post a bond or other surety in an amount equal to  
18 the cost of actual compliance by such facility and any  
19 economic value which may accrue to the owner or operator of  
20 such source by reason of the failure to comply. If a source  
21 for which the bond or other surety required by this para-  
22 graph has been posted fails to replace the facility, change  
23 the production process, or terminate the operations as spec-  
24 ified in the order by the required date, the owner or oper-  
25 ator shall immediately forfeit on the bond or other surety

1 and the State (or the Administrator) shall have no discre-  
2 tion to modify the order under this paragraph or to com-  
3 promise the bond or other surety.

4 “(4) In the case of a major emitting facility which  
5 proposes to comply with an applicable emission limitation  
6 through replacing existing production capacity with an in-  
7 novative production process which will result in an emission  
8 reduction significantly greater than required by the emission  
9 limitation applicable to such facility, or with the installation  
10 of an innovative control technique that has a substantial  
11 likelihood for enabling the source to comply with the appli-  
12 cable emission limitation by achieving a significantly greater  
13 emission reduction than that required by the applicable  
14 emission limitation, or by achieving the required reduction  
15 with an innovative system that will have potential for  
16 industry-wide application at a significantly lower cost than  
17 the systems which have been determined by the Administra-  
18 tor to be adequately demonstrated, the date required for  
19 compliance applicable to such facility under paragraphs (1)  
20 and (3) of this subsection and section 120 of this Act shall  
21 be January 1, 1981.

22 “(5) (A) In the case of a major emitting facility  
23 which—

24 “(i) is ordered to convert to coal under an order

1       pursuant to section 2(a) of the Energy Supply and  
2       Environmental Coordination Act of 1974, or  
3       “(ii) within one year after enactment of the Clean  
4       Air Amendments of 1976 gives notice of intent to convert  
5       to coal as its primary energy source because of actual  
6       or anticipated curtailment of natural gas supplies under  
7       any curtailment plan or schedule approved by the  
8       Federal Power Commission (or, in the case of intra-  
9       state natural gas supplies, approved by the appropriate  
10      State regulatory commission),  
11     and which thereby would no longer be in compliance with  
12     an applicable emission limitation under an implementation  
13     plan, an enforcement order may be issued under paragraph  
14     (1) of this subsection for such facility which specifies a date  
15     for final compliance with the applicable emission limitation  
16     later than the date for attainment of any national ambient  
17     air quality standard specified in the applicable implementa-  
18     tion plan: *Provided*, That the order provides for final com-  
19     pliance with the emission limitation in the applicable imple-  
20     mentation plan as expeditiously as practicable, but in no  
21     event later than three years after the date of an order under  
22     section 2(a) of the Energy Supply and Environmental  
23     Coordination Act of 1974 or three years after giving notice  
24     under clause (ii) of this subparagraph. which date shall be  
25     the date required for compliance applicable to such facility

1 under paragraphs (1) and (3) of this subsection and sec-  
2 tion 120 of this Act and in no event shall be later than  
3 July 1, 1980.

4 “(B) In issuing an order under this paragraph, the  
5 State shall prescribe (and may from time to time modify)  
6 emission limitations, requirements respecting pollution char-  
7 acteristics of coal, or other enforceable measures for control  
8 of emissions for each facility to which such an order applies.  
9 Such limitations, requirements, and measures shall be those  
10 which the State determines must be complied with by the  
11 facility in order to assure (throughout the period before the  
12 date for final compliance established in the order) that the  
13 burning of coal by such source will not result in emissions  
14 which cause or contribute to concentrations of any air pol-  
15 lutant in excess of any national primary ambient air quality  
16 standard for such pollutant.

17 “(C) The Administrator of the Federal Energy Ad-  
18 ministration may, by regulation, establish priorities under  
19 which manufacturers of continuous emission reduction sys-  
20 tems necessary to carry out this paragraph shall provide  
21 such systems to users thereof, if he finds, after consultation  
22 with the States and the Administrator, that priorities must be  
23 imposed in order to assure that such systems are first pro-  
24 vided to sources subject to orders under this paragraph in air  
25 quality control regions in which national primary ambient

1 air quality standards have not been achieved. No regulation  
2 under this subparagraph may impair the obligation of any  
3 contract entered into before the date of enactment of the  
4 Clean Air Amendments of 1976.

5 “(6) For the purposes of sections 110, 304, and 307  
6 of this Act, any order issued or approved by the State (or  
7 the Administrator) pursuant to this subsection shall become  
8 part of the applicable implementation plan.

9 “(7) (A) During the period of the enforcement order  
10 issued under this subsection and where the owner or opera-  
11 tor is in compliance with the terms of such enforcement  
12 order, no other enforcement action pursuant to this section  
13 or section 304 of this Act shall be pursued against such  
14 owner or operator based upon noncompliance during the  
15 period the order is in effect with the emission limitation for  
16 the source covered by such order.

17 “(B) The failure of any source subject to an enforce-  
18 ment order under this subsection to adhere to the schedule  
19 and timetable of compliance established under this subsec-  
20 tion during the period of the order, shall make such source  
21 subject to the provisions of subsections (a), (b), and (c)  
22 of this section.

23 “(8) No extension, postponement, waiver, or delay of  
24 any requirement of an implementation plan applicable to a  
25 major emitting facility shall be granted except in accordance

1 with this subsection or section 110 (f) of this Act: *Provided*,  
2 *however*, That neither this subsection nor section 120 of this  
3 Act shall be construed as limiting the authority of any State  
4 to revise any deadline for attainment of a national secondary  
5 ambient air quality standard.

6 “(9) Any actions of the Administrator pursuant to this  
7 subsection, including any objection under paragraph (2) of  
8 this subsection, shall be considered a final action for purposes  
9 of section 307 of this Act.

10 “(10) Any enforcement order issued under subsection  
11 (a) of this section or any consent decree in an enforcement  
12 action which is in effect on the day of enactment of the Clean  
13 Air Amendments of 1976 shall remain in effect to the extent  
14 that such order or consent decree is not inconsistent with  
15 the requirements of this subsection and section 120 of this  
16 Act. Any such enforcement order issued under subsection  
17 (a) of this section or consent decree which provides for an  
18 extension beyond January 1, 1979, is void unless modified  
19 to comply with the requirements of this subsection.”.

20 (b) The Clean Air Act is amended by adding a new  
21 section 120 as follows:

22 “DELAYED COMPLIANCE PENALTY

23 “SEC. 120. (a) Prior to January 1, 1978, any enforce-  
24 ment order issued under subsection (d) of section 113 of  
25 this Act shall be amended to include a delayed compliance

1 penalty established pursuant to this section which shall be  
2 imposed automatically and payable monthly for any major  
3 emitting facility which for any reason not entirely beyond  
4 the control of the owner or operator is not in compliance  
5 with an applicable emission limitation on January 1, 1979.

6       “(b) As an enforceable interim step under any enforce-  
7 ment order issued under section 113 (d) of this Act, the  
8 owner or operator of any major emitting facility not in com-  
9 pliance with an applicable emission limitation, for which such  
10 order specifies a date for compliance after January 1, 1978,  
11 shall, prior to January 1, 1977, furnish to the State (with a  
12 copy to the Administrator) information containing a detailed  
13 description of the control technology or system proposed to  
14 achieve compliance with the applicable emission limitation  
15 and the estimated cost of compliance, including capital costs,  
16 debt service costs, the estimated schedule of expenditures to  
17 comply with such limitation or requirement by January 1,  
18 1979, and the estimated annual costs of operation and  
19 maintenance of any technology or system required in order to  
20 maintain such compliance, together with such information as  
21 the State (or the Administrator) may require on the eco-  
22 nomic value which a delay in compliance beyond January 1,  
23 1979, may have for the owner or operator of such facility.

24       “(c) (1) A notice of receipt of information pursuant to  
25 subsection (b) of this section shall be published in the news-

1 papers in general circulation in such State, and such notice  
2 shall set forth where copies of the information are available  
3 for inspection and, for a reasonable charge, copying.

4 “(2) (A) Within sixty days following the date of pub-  
5 lication of the notice issued under paragraph (1) of this  
6 subsection there shall be published in the newspapers in gen-  
7 eral circulation in such State (and, as appropriate, the Fed-  
8 eral Register or any publication required as part of any rule-  
9 making activity in such State) the proposed delayed com-  
10 pliance penalty applicable to the major emitting facility, with  
11 an announcement of an opportunity for a public hearing on  
12 such action.

13 “(B) Such proposed delayed compliance penalty under  
14 subparagraph (A) of this paragraph, determined in accord-  
15 ance with guidelines published by the Administrator, shall be  
16 a monthly payment in an amount no less than the monthly  
17 equivalent of the capital costs of compliance and debt service  
18 over a normal amortization period, not to exceed ten years,  
19 operation and maintenance costs foregone as a result of non-  
20 compliance, and the economic value which a delay in com-  
21 pliance beyond January 1, 1979, may have for the owner  
22 or operator of such major emitting facility.

23 “(C) The State shall take final action establishing such  
24 delayed compliance penalty within sixty days after the date

1 of publication of the proposed penalty under subparagraph  
2 (A) of this paragraph.

3 “(d) (1) A delayed compliance penalty established by  
4 a State under this section shall apply unless the Administra-  
5 tor, within ninety days after the date of publication of the pro-  
6 posed penalty under subsection (c) (2) (A) of this section,  
7 objects in writing to the amount of the penalty as less than  
8 would be required to comply with guidelines established by  
9 the Administrator.

10 “(2) If the Administrator objects under this subsection,  
11 he shall immediately establish a substitute delayed compliance  
12 penalty applicable to such facility.

13 “(e) (1) In the event an owner or operator contests  
14 the delayed compliance penalty established under this section,  
15 the owner or operator may within sixty days seek review of  
16 such penalty in the appropriate United States district court.

17 “(2) (A) Except as provided in subparagraph (B) of  
18 this paragraph, in no event shall any challenge or review  
19 taken under this subsection operate to stay or otherwise delay  
20 the obligation of a facility not in compliance with an appli-  
21 cable emission limitation to commence monthly payment of  
22 the delayed compliance penalty as determined by the State  
23 (or the Administrator) on January 1, 1979, pending the  
24 outcome of any such review.

25 “(B) In any challenge of the imposition of the penalty  
26 based on an allegation that the failure to comply by Jan-

1 uary 1, 1979, was due to reasons entirely beyond the con-  
2 trol of the owner or operator, the obligation to commence  
3 monthly payment of the delayed compliance penalty may  
4 be stayed pending the outcome of such challenge: *Provided*,  
5 That as a condition of such stay, the owner or operator of  
6 such source shall post a bond or other surety in an amount  
7 equal to the potential liability for such penalty during the  
8 period of the stay.

9 “(3) If an owner or operator is successful in any chal-  
10 lenge or review proceedings under this subsection, the court  
11 may award such relief as necessary, including cancellation  
12 of the bond, rebate of any payments, or adjustment of the  
13 amount of payments required by the order.

14 “(f) In any case where a State does not have sufficient  
15 authority to issue a delayed compliance penalty, the Admin-  
16 istrator after thirty days notice to the State shall establish,  
17 implement, and enforce such penalty.

18 “(g) Failure to make any payment required by an order  
19 under this section and section 113 (d) of this Act or to  
20 submit information required under this section shall, in  
21 addition to liability for such payments, subject the owner or  
22 operator of a major emitting facility operating pursuant to  
23 an enforcement order issued under section 113 (d) of this  
24 Act to a penalty under subsection (e) of section 113 of  
25 this Act.

1       “(h) Any actions pursuant to this section, including any  
2   objection of the Administrator under subsection (d) (1) of  
3   this section, shall be considered a final action for purposes of  
4   section 307 of this Act.

5       “(i) Any enforcement orders, payments, sanctions, or  
6   other requirements under this section shall be in addition to  
7   any other permits, orders, payments, sanctions, or other re-  
8   quirements established under this Act, and shall in no way  
9   effect any civil or criminal enforcement proceedings brought  
10   under any provision of this Act or State or local law.

11       “(j) In the case of an emission limitation approved or  
12   promulgated by the Administrator after the enactment of the  
13   Clean Air Amendments of 1976 which is more stringent than  
14   the emission limitation for the source under the applicable  
15   implementation plan in effect prior to such approval or  
16   promulgation, if any, or where there was no emission limita-  
17   tion approved or promulgated before enactment of the Clean  
18   Air Amendments of 1976, the date for imposition of the  
19   delayed compliance penalty under subsection (a) of this  
20   section, and for purposes of subsections (b), (c) (2) (B),  
21   and (e) of this section, shall be either January 1, 1979, or  
22   the date on which the source is required to be in full compli-  
23   ance with the emission limitation, whichever is later, but  
24   in no event later than three years after the approval or  
25   promulgation of such emission limitation.”

1        SEC. 10. The Clean Air Act is amended:

2        (a) By amending subsection (b) of section 113 to read  
3 as follows:

4        “(b) The Administrator shall commence a civil action  
5 for appropriate relief, including a permanent or temporary  
6 injunction, or to assess and recover a civil penalty of not  
7 more than \$10,000 per day of violation or both, whenever  
8 any person—

9        “(1) violates or fails or refuses to comply with any  
10 order issued under subsection (a) or (d) of this sec-  
11 tion; or

12        “(2) violates any requirement of an applicable im-  
13 plementation plan (A) during any period of federally  
14 assumed enforcement, or (B) more than thirty days  
15 after having been notified by the Administrator under  
16 subsection (a) (1) of a finding that such person is vio-  
17 lating such requirement; or

18        “(3) violates section 111(c), 112(c), 119(g),  
19 120(b), or 120(g); or

20        “(4) fails or refuses to comply with any require-  
21 ment of section 114.

22 Any action under this subsection shall be brought in the  
23 district court of the United States for the district in which the  
24 defendant is located or resides or is doing business, and such  
25 court shall have jurisdiction to restrain such violation, to re-

1 quire compliance, and assess such penalty. Notice of the com-  
2 mencement of such action shall be given to the appropriate  
3 State air pollution control agency.”.

4 (b) By amending subsection (c) of section 113—  
5 (1) to amend paragraph (1) (B) to read as fol-  
6 lows:

7 “(B) violates or fails or refuses to comply with any  
8 order under subsection (a) or (d) of this section, or”;  
9 and

10 (2) to add a new paragraph (3) as follows:

11 “(3) For the purpose of this subsection, the term ‘per-  
12 son’ shall mean, in addition to the definition contained in  
13 section 302 (e) of this Act, any responsible corporate  
14 officer.”.

15 (c) By adding the following new subsections to section  
16 113:

17 “(e) In any case where a person is in knowing viola-  
18 tion of a provision of an implementation plan applicable to  
19 a stationary source, where there has been no request for an  
20 enforcement order extending the date of compliance concern-  
21 ing such source filed pursuant to subsection (d) of this  
22 section within one hundred and eighty days after enactment  
23 of the Clean Air Amendments of 1976 (unless such an order  
24 has been issued under this section without any such request),  
25 or where a person is in violation of the requirements of sub-

1 section (b) or (g) of section 120 of this Act, such person  
2 shall be punished by a fine of not more than \$25,000 per day  
3 of violation.

4 “(f) If it is alleged that interference with the achieve-  
5 ment or maintenance of any national primary or secondary  
6 ambient air quality standard will result from any major  
7 emitting facility in any region of a State other than the  
8 State in which the facility is or may be located, the Admin-  
9 istrator, at the request of the Governor of such other State,  
10 shall review the operation or proposed operation of such  
11 facility and, if necessary to prevent interference with the  
12 achievement or maintenance of any national primary or  
13 secondary ambient air quality standard in such other State,  
14 he shall take such measures, including seeking injunctive  
15 relief, as necessary to prevent such interference.”.

16 SEC. 11. Section 113 of the Clean Air Act is amended  
17 by adding the following new subsection:

18 “(g) (1) No major emitting facility shall be constructed  
19 or modified in any air quality control region or portion  
20 thereof in which any national ambient air quality standard  
21 is exceeded, if such facility will emit air pollutants subject to  
22 such standard so as to prevent the attainment or maintenance  
23 of such standard, except that a facility proposed for con-  
24 struction or modification at an existing site or plant owned  
25 or controlled by the owner or operator of such facility may

1 be constructed or modified in such region if the owner or  
2 operator demonstrates to the satisfaction of the State that  
3 (A) the proposed facility will comply with the best avail-  
4 able control technology (as defined in section 110 (g) (6)  
5 (A) of this Act) applicable to such proposed facility before  
6 the proposed facility begins operation, (B) all existing  
7 sources owned or controlled by the owner or operator of the  
8 proposed facility in the same air quality control region as the  
9 proposed facility either are in compliance with all applicable  
10 emission limitations or are in compliance with an approved  
11 schedule and timetable for compliance under a provision of  
12 an applicable implementation plan under section 110 of this  
13 Act or an enforcement order issued under section 113 (d) of  
14 this Act, (C) the total cumulative emissions from the exist-  
15 ing sources at the proposed facility location and the proposed  
16 facilities will at no time increase, (D) the total allowable  
17 emissions from all existing and proposed sources at the pro-  
18 posed facility location will be sufficiently less than the total  
19 allowable emissions from the existing sources under the im-  
20 plementation plan or an approved schedule and timetable for  
21 compliance applicable prior to the request to construct or  
22 modify so as to represent reasonable further progress toward  
23 attainment of the applicable national ambient air quality  
24 standard, taking into account progress already made.

25 “(2) After January 1, 1979, only a proposed facility

1 where all existing sources owned or controlled by the owner  
2 or operator of the proposed facility in the same air quality  
3 control region as the proposed facility are in compliance  
4 with all emission limitations under an applicable implementa-  
5 tion plan under section 110 of this Act shall be eligible for  
6 an exception under paragraph (1) of this subsection.

7 “(3) The provisions of this subsection shall not be  
8 available where a State has not made any appropriate re-  
9 vision in the applicable implementation plan to include the  
10 emission limitations established for sources at the proposed  
11 facility location under paragraph (1) (D) of this subsec-  
12 tion.”.

13 SEC. 12. Section 115 of the Clean Air Act is amended  
14 to read as follows:

15 “SEC. 115. (a) Whenever the Administrator, upon  
16 receipt of requests, reports, surveys, or studies from any duly  
17 constituted international agency, has reason to believe that  
18 any air pollutant or pollutants emitted in the United States  
19 endanger the health or welfare of persons in a foreign coun-  
20 try, or whenever the Secretary of State requests him to do  
21 so with respect to such pollutant or pollutants which the  
22 Secretary of State alleges is of such a nature, the Admin-  
23 istrator shall give formal notification thereof to such Gov-  
24 ernor of the State in which such emissions originate.

25 “(b) The notice of the Administrator shall operate as

1 finding under clause (ii) of subparagraph (H) of subsection  
2 (a) (2) of section 110 of this Act and any foreign country  
3 adversely affected by the emission of pollutant or pollutants  
4 shall be invited to appear at any public hearing associated  
5 with any revision of the appropriate portion of the appli-  
6 cable implementation plan.

7 “(c) This section shall apply only to a foreign country  
8 which the Administrator determines has given the United  
9 States essentially the same rights with respect to the pre-  
10 vention or control of air pollution occurring in that country  
11 as is given that country by this section.

12 “(d) Recommendations issued following any abate-  
13 ment conference conducted prior to the enactment of the  
14 Clean Air Amendments of 1976 shall remain in effect with  
15 respect to any pollutant for which no national ambient air  
16 quality standard has been established under section 109 of  
17 this Act. However, the Administrator, after consultation with  
18 all agencies which were party to the conference, may rescind  
19 any such recommendation on grounds of obsolescence.”.

20 SEC. 13. Section 117 of the Clean Air Act is amended—

21 (1) to strike subsections (a) through (c) ;

22 (2) to renumber subsections (d) and (e) as sub-  
23 sections (a) and (b), respectively; and

24 (3) to amend redesignated subsection (b)—

25 (A) by striking the words “the Board and”

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1           the first time the word "Board" appears and in-  
2           serting in lieu thereof the word "any"; and

3           (B) by striking the words "of the Board" the  
4           second time the word "Board" appears.

5       SEC. 14. Section 118 of the Clean Air Act is amended  
6       by striking in the first sentence thereof the words "comply  
7       with Federal, State, interstate, and local requirements re-  
8       specting control and abatement of air pollution to the same  
9       extent that any person is subject to such requirements."  
10      and inserting in lieu thereof the words "be subject to, and  
11      comply with, all Federal, State, interstate, and local require-  
12      ments, both substantive and procedural (including any re-  
13      quirement for permits or reporting or any provisions for in-  
14      junctive relief and such sanctions as may be imposed by a  
15      court to enforce such relief), respecting control and abate-  
16      ment of air pollution in the same manner, and to the same  
17      extent, as any person is subject to such requirements, includ-  
18      ing the payment of reasonable service charges. Neither the  
19      United States nor any agent, employee, nor officer thereof  
20      shall be immune or exempt from any process or sanction  
21      of any State or Federal court with respect to the enforce-  
22      ment of any such injunctive relief."

23      SEC. 15. (a) (1) Section 119 of the Clean Air Act, as  
24      amended, is hereby repealed. All references to section 119  
25      or subsections thereof in section 2 of the Energy Supply and

1 Environmental Coordination Act of 1974 (Public Law 93-  
2 319) shall be construed to refer to section 113 (d) of the  
3 Clean Air Act and to paragraph (5) thereof in particular.  
4 Any certification or notification required to be given by the  
5 Administrator of the Environmental Protection Agency  
6 under section 2 of the Energy Supply and Environmental  
7 Coordination Act of 1974 shall be given instead by the  
8 appropriate State.

9 (2) In the case of any major emitting facility to which  
10 any requirement is applicable under section 113 (d) (5) (B)  
11 of the Clean Air Act and for which certification is required  
12 under section 2 of the Energy Supply and Environmental  
13 Coordination Act of 1974, the State shall certify the date  
14 which it determines is the earliest date that such facility will  
15 be able to comply with all such requirements. In the case  
16 of any plant or installation which the State determines (after  
17 consultation with the Administrator of the Environmental  
18 Protection Agency) will not be subject to an order under  
19 section 113 (d) of the Clean Air Act and for which cer-  
20 tification is required under section 2 of the Energy Supply  
21 and Environmental Coordination Act of 1974, the State shall  
22 certify the date which it determines is the earliest date  
23 that such plant or installation will be able to burn coal in  
24 compliance with all applicable emission limitations under the  
25 implementation plan.

1       (3) Any certification required under section 2 of the  
2 Energy Supply and Environmental Coordination Act of  
3 1974 or under this subsection may be provided in an en-  
4 forcement order under section 113 (d) of the Clean Air Act.

5       (b) Section 111 (a) of the Clean Air Act, as amended,  
6 is amended by adding the following new paragraph:

7       “(7) A conversion to coal (A) by reason of an order  
8 under section 2 (a) of the Energy Supply and Environ-  
9 mental Coordination Act of 1974, or (B) which qualifies  
10 under section 113 (d) (5) (A) (ii) of this Act, shall not be  
11 deemed to be a modification for purposes of paragraphs (2)  
12 and (4) of this subsection.”.

13       SEC. 16. (a) Title I of the Clean Air Act is amended  
14 by adding at the end thereof the following new part:

15                       “PART B—OZONE PROTECTION

16                               “PURPOSES

17       “SEC. 150. The purposes of this part are (1) to provide  
18 for a better understanding of the effects of human actions  
19 on the ozone in the stratosphere, (2) to provide for a better  
20 understanding of the effects of changes in the ozone in the  
21 stratosphere on the public health and welfare, and (3) to  
22 authorize the regulation of activities which affect the ozone  
23 in the stratosphere in such a way as to cause or contribute  
24 to endangerment of the public health or welfare.

1 "FINDINGS AND DEFINITIONS

2 "SEC. 151. (a) The Congress finds, on the basis of pres-  
3 ently available information, that—

4 "(1) halocarbon compounds introduced into the  
5 environment potentially threaten to reduce the con-  
6 centration of ozone in the stratosphere;

7 "(2) ozone reduction will lead to increased inci-  
8 dence of solar ultraviolet radiation at the surface of  
9 the Earth;

10 "(3) increased incidence of solar ultraviolet radia-  
11 tion is likely to cause increased rates of disease in  
12 humans (including increased rates of skin cancer),  
13 threaten food crops, and otherwise damage the natural  
14 environment; and

15 "(4) other substances, practices, processes, and  
16 activities may affect the ozone in the stratosphere, and  
17 should be investigated to give early warning of any  
18 potential problem and to develop the basis for possible  
19 future regulatory action.

20 "(b) For the purposes of this part—

21 "(1) the term 'halocarbon' means the chemical  
22 compounds  $\text{CFCl}_3$  and  $\text{CF}_2\text{Cl}_2$ , other chlorofluoro-  
23 methanes, and such other halogenated compounds as  
24 the Administrator determines may threaten to con-

1       tribute to reductions in the concentration of the ozone  
2       in the stratosphere;

3       “(2) the term ‘stratosphere’ means that part of  
4       the atmosphere above the tropopause; and

5       “(3) the term ‘aerosol containers’ means pres-  
6       surized dispensing containers.

7                               “STUDIES AND REPORTS

8       “SEC. 152. (a) The Administrator shall undertake to  
9       contract with the National Academy of Sciences to—

10       “(1) continue the study begun prior to enactment  
11       of this part and report to the Administrator and the Con-  
12       gress not later than July 1, 1976, concerning the nature  
13       and likelihood of potential direct and indirect effects on  
14       the public health and welfare from the release of halo-  
15       carbons into the atmosphere; and

16       “(2) perform further studies and report to the Ad-  
17       ministrator and the Congress not later than October 1,  
18       1977, on—

19       “(A) the nature and likelihood of potential di-  
20       rect and indirect effects on the ozone in the strato-  
21       sphere from the release of halocarbons into the  
22       atmosphere;

23       “(B) the nature and likelihood of potential di-  
24       rect and indirect effects on the ozone in the strato-

1 sphere from other substances, practices, processes,  
2 or activities;

3 “(C) the nature and likelihood of potential di-  
4 rect and indirect effects on public health or welfare  
5 from changes in the ozone in the stratosphere; and

6 “(D) methods to control or replace halocarbons  
7 or other substances, practices, processes, or activi-  
8 ties which may affect the ozone in the stratosphere.

9 “(b) The Secretary of Labor shall study and transmit  
10 reports to the Administrator and the Congress (1) not later  
11 than October 1, 1976, with respect to the losses and gains to  
12 industry and employment which could result from the elimi-  
13 nation of the use of halocarbons in aerosol containers and  
14 recommended means of alleviating unemployment or other  
15 undesirable economic impact, if any, resulting therefrom; and  
16 (2) not later than October 1, 1977, with respect to the  
17 losses and gains to industry and employment which could  
18 result from the control of uses of halocarbon compounds  
19 other than in aerosol containers, and recommended means  
20 of alleviating unemployment or other undesirable economic  
21 impact, if any, resulting therefrom.

22 “(c) (1) The National Aeronautics and Space Admin-  
23 istration shall—

24 “(A) pursuant to its authority under title IV of  
25 the National Aeronautics and Space Act of 1958, as

1       amended by Public Law 94-39, continue programs of  
2       research, technology, and monitoring of the stratosphere  
3       for the purpose of understanding the physics and chem-  
4       istry of the stratosphere and for the early detection of  
5       potentially harmful changes in the ozone in the strato-  
6       sphere;

7       “(B) in implementing this subsection, coordinate  
8       the programs of all Federal agencies relating to the  
9       research, technology, and monitoring of the phenomena  
10      of the upper atmosphere, including the stratosphere;

11      “(C) transmit reports by October 1, 1976, by Octo-  
12      ber 1, 1977, and from time to time thereafter, but at  
13      least once each Congress, to the Administrator and the  
14      Congress on the results of the programs authorized in  
15      this subsection, together with any appropriate recom-  
16      mendations for Federal action, including regulations.

17      “(2) Nothing in title IV of the National Aeronautics  
18      and Space Act of 1958, as amended, or this Act shall pre-  
19      vent the National Aeronautics and Space Administration  
20      from delegating operational monitoring of the stratosphere  
21      to another appropriate Federal agency.

22      “(d) The Administrator of the National Oceanic and  
23      Atmospheric Administration shall continue programs of re-  
24      search and monitoring of the atmosphere for the purpose of  
25      early detection of potentially harmful changes in the ozone

1 in the stratosphere and the climatic effects of reduction of  
2 ozone in the stratosphere and transmit reports by October 1,  
3 1976, by October 1, 1977, and from time to time thereafter,  
4 but at least once each Congress, to the Administrator, the  
5 National Aeronautics and Space Administration, and the  
6 Congress on the results of such programs, together with any  
7 appropriate recommendations for Federal action, including  
8 regulations.

9 “(e) The Director of the National Science Foundation  
10 shall encourage and support ongoing stratospheric research  
11 programs and continuing research programs that will increase  
12 scientific knowledge of the effects of changes in the ozone  
13 layer in the stratosphere upon living organisms and ecosys-  
14 tems; and transmit reports by October 1, 1976, by October 1,  
15 1977, and from time to time thereafter but at least once each  
16 Congress, to the Administrator, the National Aeronautics  
17 and Space Administration and the Congress on the results  
18 of such programs, together with any appropriate recommen-  
19 dations for Federal action, including regulations.

20 “(f) The Secretary of Agriculture shall encourage and  
21 support continuing research programs that will increase sci-  
22 entific knowledge of the effects of changes in the ozone in  
23 the stratosphere upon animals, crops, and other plant life;  
24 and shall transmit reports by October 1, 1976, by October 1,  
25 1977, and from time to time thereafter but at least once each

1 Congress, to the Administrator and the Congress on the  
2 results of such programs together with any appropriate rec-  
3 ommendations for Federal action, including regulations.

4 “(g) The Secretary of Health, Education, and Welfare  
5 shall—

6 “(1) encourage and support continuing research  
7 programs that will increase scientific knowledge of the  
8 effects of changes in the ozone in the stratosphere upon  
9 human health; and shall transmit reports by October 1,  
10 1976, by October 1, 1977, and from time to time there-  
11 after, but at least once each Congress, to the Adminis-  
12 trator and the Congress on the results of such programs,  
13 together with any appropriate recommendations for Fed-  
14 eral action, including regulations.

15 “(2) In carrying out the programs authorized by  
16 this subsection, utilize the National Institute of Environ-  
17 mental Health Science to coordinate the programs of  
18 all Federal agencies relating to research into the effects  
19 upon human health of changes in the ozone layer in the  
20 stratosphere.

21 “(h) The Food and Drug Administration, in coopera-  
22 tion with the Consumer Product Safety Commission, shall  
23 consider proposed substitutes for halocarbons in aerosol  
24 containers and other uses and shall propose regulations to

1 assure that such substitutes do not adversely affect human  
2 health, directly or indirectly.

3 “(i) The Administrator shall—

4 “(1) encourage and support continuing research  
5 programs that will increase scientific knowledge of the  
6 effects on public health and welfare of changes in the  
7 ozone layer in the stratosphere. Such research shall be  
8 coordinated with other Federal agencies identified in  
9 this section. He shall report to the Congress on the find-  
10 ings of such research by October 1, 1976, by October 1,  
11 1977, and from time to time thereafter, but at least once  
12 each Congress.

13 “(2) not later than two years after the date of the  
14 enactment of the Clean Air Amendments of 1976, sub-  
15 mit to the Congress a summary report of the results of  
16 the studies and research conducted under this section by  
17 the Environmental Protection Agency and other Federal  
18 agencies. The Administrator shall include in the report  
19 a summary of his actions regulating sources of halocar-  
20 bons and his recommendations for control of substances,  
21 practices, processes, and activities other than those in-  
22 volving halocarbons, which are found to affect the ozone  
23 in the stratosphere and which may cause or contribute  
24 to harmful effects on public health or welfare.

25 “(j) In carrying out the programs provided for in sub-

1 sections (b) through (i) of this section, the agencies re-  
2 sponsible shall enlist and encourage assistance from the  
3 Nation's institutions of higher education and private organi-  
4 zations, including industrial, labor, consumer, environmental  
5 and other organizations, coordinate such activity with the  
6 other appropriate agencies, and solicit and consider the views  
7 of the Administrator with regard to plans for the research  
8 technology and monitoring involved so that such research  
9 technology and monitoring will help provide the information  
10 base for the Administrator to decide whether regulatory  
11 action is necessary and to take such action if it is necessary.

12 “(k) The Administrator shall convene a Management  
13 Council to facilitate coordination of the programs authorized  
14 under this part, which Council shall (A) be comprised of  
15 the officials responsible for the research efforts of the agen-  
16 cies required to perform research under this part, and of  
17 such other agencies as the Administrator may designate;  
18 (B) review plans and funding for pertinent research and  
19 studies in order to provide the information base for the Ad-  
20 ministrator to decide what regulatory action, if any, is neces-  
21 sary, and (C) coordinate the preparation of reports au-  
22 thorized or required under this part to minimize duplication  
23 and insure that the necessary reports are made available in  
24 a timely fashion.

## 1 "REGULATION

2 "SEC. 153. (a) Not later than January 1, 1978, the  
3 Administrator, after considering available reports under sec-  
4 tion 152, and other available information, and after consult-  
5 ing appropriate agencies and scientific entities, if he then  
6 finds that halocarbon emissions from aerosol containers may  
7 reasonably be anticipated to cause or contribute to the  
8 endangerment of public health or welfare, shall publish  
9 proposed regulations which prohibit or restrict the manufac-  
10 ture, sale, import, export, or use of aerosol containers which  
11 result in discharge of halocarbons into the atmosphere to  
12 the extent necessary to avoid any such endangerment of  
13 public health or welfare. Not later than April 1, 1978,  
14 and after public hearings, the Administrator shall promul-  
15 gate and transmit to the Congress final regulations, which  
16 shall take effect if not disapproved pursuant to subsection  
17 (b) of this section.

18 "(b) Regulations promulgated under subsection (a) of  
19 this section and any amendment or revision thereof shall be  
20 transmitted to the Congress. A regulation transmitted under  
21 this subsection shall take effect at the end of the first period  
22 of ninety calendar days of continuous session of Congress after  
23 the date on which the regulation is transmitted to it unless,  
24 between the date of transmittal and the end of the ninety-day

1 period, either House passes a resolution disapproving such  
2 regulation.

3 “(c) From time to time after April 1, 1978, the Admin-  
4 istrator may revise, promulgate, and submit to the Congress,  
5 in accordance with subsection (b) of this section any of the  
6 regulations promulgated pursuant to this section in the light  
7 of new evidence.

8 “EXPEDITED REGULATION

9 “SEC. 154. (a) If the Administrator at any time prior  
10 to January 1, 1978, finds it necessary to protect the public  
11 health or welfare from significant risk of harmful effects  
12 which may reasonably be anticipated to arise in whole or  
13 in part from halocarbon emissions from aerosol containers,  
14 he shall promptly, after public hearings, promulgate regula-  
15 tions which prohibit or restrict the manufacture, pro-  
16 duction, sale, import, export, or use of aerosol containers  
17 discharging halocarbons into the atmosphere. In promul-  
18 gating such regulations the Administrator shall take into  
19 account the public need for such aerosol containers, the  
20 costs and feasibility of such action, and all other costs re-  
21 lated to depletion of stratospheric ozone.

22 “(b) To the extent determined essential to protect the  
23 public health and welfare pursuant to this section, the Admin-  
24 istrator may in the promulgation of regulations pursuant to

1 subsection (a) proceed without regard to such provisions  
2 of title 5 of the United States Code, relating to administra-  
3 tive procedure, as he determines necessary.

4 “(c) From time to time the Administrator may revise  
5 any of the regulations issued pursuant to this section in the  
6 light of new evidence.

7 “ADDITIONAL REGULATION

8 “SEC. 155. The Administrator shall—

9 “(a) consult with appropriate Federal agencies and  
10 scientific entities;

11 “(b) afford an opportunity for public hearing; and

12 “(c) if he then finds that halocarbons released from  
13 sources other than aerosol containers may reasonably be  
14 anticipated to cause or contribute to the endangerment  
15 of the public health or welfare, publish not later than  
16 April 1, 1978, proposed regulations for the control of  
17 these emissions. Such regulations shall restrict the manu-  
18 facture, sale, import, export, or use of such sources to  
19 the extent necessary to avoid such endangerment of  
20 public health or welfare, and shall include limitations on  
21 emissions from such sources to the maximum extent  
22 feasible, taking into account the cost of achieving such  
23 limitations and all other costs related to the depletion  
24 of stratospheric ozone. The Administrator shall take into  
25 consideration the findings of other Federal agencies

1       conducting research on stratospheric ozone pertaining to  
2       the public health and welfare, and available reports pre-  
3       pared pursuant to section 152. Regulations proposed  
4       under this section shall be promulgated in final form  
5       within ninety days. From time to time the Adminis-  
6       trator may revise any of the regulations issued under this  
7       section in the light of new evidence.

8                               “PENALTIES

9       “SEC. 156. (a) It shall be unlawful for any person to  
10      violate any provision of regulations pursuant to section 153,  
11      154, or 155 of this Act.

12      “(b) (1) The Administrator shall commence a civil  
13      action in the United States district court in the judicial  
14      district in which the person alleged to be engaged in conduct  
15      prohibited by regulations under section 153, 154, or 155  
16      of this Act is located or conducts business, for appropriate  
17      relief, including a temporary restraining order or a pre-  
18      liminary or permanent injunction to restrain any such  
19      conduct.

20      “(2) Any person engaged in conduct prohibited by  
21      regulations under section 153, 154, or 155 of this Act, other  
22      than use of aerosol containers by an ultimate consumer,  
23      shall be subject to a civil penalty of not more than \$10,000  
24      per day of violation.

## 1 "INTERNATIONAL COOPERATION

2 "SEC. 157. The President shall undertake to enter  
3 into international agreements to foster cooperative research  
4 which complements studies and research authorized by this  
5 part, and to develop standards and regulations which pro-  
6 tect the stratosphere consistent with regulations under sec-  
7 tions 153, 154, and 155 of this Act. For these purposes the  
8 President through the Secretary of State and the Assistant  
9 Secretary of State for Oceans and International Environ-  
10 mental and Scientific Affairs, shall negotiate multilateral  
11 treaties, conventions, resolutions, or other agreements, and  
12 formulate, present, or support proposals at the United Na-  
13 tions and other appropriate international forums and shall  
14 report to the Congress periodically on efforts to arrive at  
15 such agreements. Research agreements shall be developed  
16 in accordance with section 8 of Public Law 94-39, and  
17 other existing legislation.

## 18 "STATE AUTHORITY

19 "SEC. 158. Nothing in this part shall preclude or deny  
20 the right of any State or political subdivision thereof to adopt  
21 or enforce any regulation controlling the manufacture, sale,  
22 or use of halocarbons except that if any regulation is in effect  
23 under this part such State or political subdivision may not  
24 adopt or enforce any regulation which is less stringent than  
25 the regulation under this part.

## 1 "AUTHORIZATION OF APPROPRIATIONS

2 "SEC. 159. For the purpose of carrying out the pro-  
3 visions of this part, there are authorized to be appropriated—

4 "(i) to the National Aeronautics and Space Ad-  
5 ministration, the National Science Foundation, and the  
6 Department of State, such sums as may be necessary  
7 for the fiscal year ending June 30, 1976, the transition  
8 quarter ending September 30, 1976, and the fiscal  
9 year ending September 30, 1977; and

10 "(ii) to all other agencies such sums as may be  
11 necessary."

12 (b) Title I of the Clean Air Act is amended by insert-  
13 ing immediately before section 101 the following:

## 14 "PART A—AIR QUALITY AND EMISSION LIMITATIONS".

15 SEC. 17. (a) Section 202 (a) of the Clean Air Act is  
16 amended by adding a new paragraph (3) as follows:

17 "(3) The regulations under paragraph (1) of this  
18 subsection applicable to emissions of carbon monoxide,  
19 hydrocarbons, particulates, and oxides of nitrogen from  
20 heavy duty trucks, buses, and motorcycles and engines  
21 thereof manufactured in model years (A) 1979 and  
22 1980 (and, if appropriate in the judgment of the Admin-  
23 istrator, 1978) shall contain standards which require a  
24 reduction of emissions of such pollutants established by the  
25 application of the best available control technology, tak-

1 ing into account the cost of compliance, as determined by  
2 the Administrator, and (B) 1981 and thereafter shall  
3 contain standards requiring a reduction of emissions of  
4 such pollutants equivalent to the levels required by the  
5 standards established under subsection (b) of this sec-  
6 tion, except that for heavy duty motor vehicles over  
7 10,000 pounds and engines thereof such standards shall  
8 constitute a reduction from uncontrolled levels of emis-  
9 sions of carbon monoxide, hydrocarbons, and oxides of  
10 nitrogen as actually measured from gasoline powered  
11 heavy duty motor vehicles over 10,000 pounds and  
12 engines thereof equivalent to the percentage reduction  
13 required for light duty motor vehicles in model year 1980  
14 compared to the appropriate model year 1970 base or,  
15 for oxides of nitrogen, model year 1971 base (unless  
16 the Administrator finds and reports to the Congress  
17 that the control technology is not available or has not  
18 been available for a sufficient period of time to achieve  
19 compliance on any class of heavy duty vehicle or engine  
20 thereof and establishes standards which are based on  
21 the best available control technology and which consti-  
22 tute a reduction from any standards which apply in  
23 model years 1978 through 1980). The Administrator  
24 may, where appropriate, divide vehicles and engines  
25 thereof regulated under this paragraph into classes by  
26 size, weight, horsepower, and use patterns.”.

1 (b) Section 206(a) (1) of the Clean Air Act is  
2 amended by inserting "(A)" after "(1)" and by adding  
3 at the end thereof the following:

4 "(B) In the case of heavy-duty motor vehicles, the Ad-  
5 ministrator may perform, or require to be performed, the  
6 tests provided under subparagraph (A) of this paragraph on  
7 heavy-duty motor vehicle engines for application in a range  
8 of vehicle configuration and use patterns."

9 SEC. 18. Subparagraph (A) of paragraph (1) of  
10 section 202 (b) of the Clean Air Act is amended by striking  
11 the term "1977", and inserting in lieu thereof "1979"; by  
12 striking the phrase "and 1976" after the term "1975" where  
13 it first appears, and inserting in lieu thereof "1976, 1977,  
14 and 1978".

15 SEC. 19. Subparagraph (B) of paragraph (1) of section  
16 202 (b) of the Clean Air Act is amended to read as follows:

17 "(B) The regulations under subsection (a) applicable  
18 to emissions of oxides of nitrogen from light duty vehicles  
19 and engines manufactured during (i) model year 1976 shall  
20 contain standards which provide that such emissions from  
21 such vehicles and engines may not exceed 3.1 grams per ve-  
22 hicle mile, (ii) (subject to the provisions of paragraph (5)  
23 of this subsection) model years 1977, 1978, and 1979 shall  
24 contain standards which provide that such emissions from  
25 such vehicles and engines may not exceed 2.0 grams per

1 vehicle mile, and (iii) model year 1980 and thereafter shall  
2 contain standards which provide that such emissions from  
3 such vehicles and engines may not exceed 1.0 gram per  
4 vehicle mile.”.

5 SEC. 20. Section 202 (b) (5) of the Clean Air Act is  
6 amended to read as follows:

7 “(5) The Administrator shall promulgate regulations  
8 requiring each manufacturer whose sales represent more than  
9 3 per centum of total light duty motor vehicle unit sales in the  
10 world to comply during model year 1979 with the emission  
11 standards required under paragraph (1) of this subsection  
12 for model year 1980 on 10 per centum of the manufacturer’s  
13 projected total sales in model year 1979, as determined by  
14 the Administrator. Such regulations shall provide that no  
15 more than 90 per centum of such manufacturer’s projected  
16 total sales of light duty motor vehicles in model year 1979  
17 may be sold in compliance with the emission standards  
18 otherwise required under paragraph (1) of this subsection  
19 for model year 1979.”.

20 SEC. 21. Section 202 (b) of the Clean Air Act is  
21 amended by adding a new paragraph (6) as follows:

22 “(6) The Congress hereby declares and establishes as  
23 a research objective, the development of propulsion sys-  
24 tems and emission control technology to achieve standards  
25 which represent a reduction of at least 90 per centum from

1 the average emissions of oxides of nitrogen actually meas-  
2 ured from light duty motor vehicles manufactured in model  
3 year 1971 not subject to any Federal or State emission  
4 standard for oxides of nitrogen. The Administrator shall,  
5 by regulations promulgated within one hundred and eighty  
6 days after enactment of the Clean Air Amendments of 1976,  
7 require each manufacturer whose sales represent at least 0.5  
8 per centum of light duty motor vehicle sales in the United  
9 States, to build and, on a regular basis, demonstrate the  
10 operation of light duty motor vehicles that meet this research  
11 objective, in addition to any other applicable standards or  
12 requirements for other pollutants under this Act. Such  
13 demonstration vehicles shall be submitted to the Administra-  
14 tor no later than model year 1978 and in each model year  
15 thereafter. Such demonstration shall, in accordance with  
16 applicable regulations, to the greatest extent possible, (A) be  
17 designed to encourage the development of new powerplant  
18 and emission control technologies that are fuel efficient, (B)  
19 assure that the demonstration vehicles are or could reason-  
20 ably be expected to be within the productive capability of  
21 the manufacturers, and (C) assure the utilization of optimum  
22 engine, fuel, and emission control systems.”.

23 SEC. 22. Section 202 (c) (1) of the Clean Air Act is  
24 amended to read as follows:

25 “(c) (1) The Administrator shall undertake to enter  
26 into appropriate arrangements with the National Academy

1 of Sciences to conduct continuing comprehensive studies and  
2 investigations of the effects on public health and welfare  
3 of emissions subject to subsection (a) of this section (includ-  
4 ing sulfur compounds) and the technological feasibility of  
5 meeting emission standards required to be prescribed by the  
6 Administrator by subsection (b) of this section. The Admin-  
7 istrator shall report to the Congress within six months of the  
8 date of enactment of this paragraph and each year thereafter  
9 regarding the status of the contractual arrangements and con-  
10 ditions necessary to implement this paragraph.”.

11 SEC. 23. Section 202 (d) of the Clean Air Act is  
12 amended by amending paragraph (2) to read as follows:

13 “(2) in the case of any motorcycle or any other  
14 motor vehicle or motor vehicle engine not included in  
15 paragraph (1), be a period of use the Administrator  
16 shall determine.”.

17 SEC. 24. (a) Section 203 (a) of the Clean Air Act is  
18 amended by inserting “(A)” after “(3)” and by adding  
19 a new subparagraph (B) at the end of paragraph (3) as  
20 follows:

21 “(B) for any person engaged in the business of  
22 repairing, servicing, selling, leasing, or trading motor  
23 vehicles or motor vehicle engines, or who operates a  
24 fleet of motor vehicles, knowingly to remove or render  
25 inoperative any device or element of design installed

1 on or in a motor vehicle or motor vehicle engine in  
2 compliance with regulations under this title following  
3 its sale and delivery to the ultimate purchaser, or”.

4 (b) Section 205 of the Clean Air Act is amended to  
5 read as follows:

6 “SEC. 205. Any person who violates paragraph (1),  
7 (2), or (4) of section 203 (a) or any manufacturer who  
8 violates paragraph (3) of section 203 (a) shall be subject  
9 to a civil penalty of not more than \$10,000. Any person who  
10 violates paragraph (3) of section 203 (a) shall be subject  
11 to a civil penalty of not more than \$2,500. Any such viola-  
12 tion with respect to paragraph (1), (2), (3), or (4) of  
13 section 203 (a) shall constitute a separate offense with  
14 respect to each motor vehicle or motor vehicle engine.”.

15 SEC. 25. Section 203 (a) (4) of the Clean Air Act is  
16 amended by striking “or” at the end of subparagraph (A),  
17 by striking the period at the end of subparagraph (B) and  
18 inserting “, or” in lieu thereof, and by adding a new sub-  
19 paragraph (C) as follows:

20 “(C) except as provided in subsection (c) (3) of  
21 section 207, to provide directly or indirectly in any com-  
22 munication to the ultimate purchaser or any subsequent  
23 purchaser that the coverage of any warranty under this  
24 Act is conditioned upon use of any part, component, or  
25 system manufactured by such manufacturer or any per-

1 son acting for such manufacturer or under his control,  
2 or conditioned upon service performed by any such  
3 person.”.

4 . SEC. 26. Section 206 (b) (1) of the Clean Air Act is  
5 amended by inserting “(A)” after “(b) (1)” and adding  
6 a new subparagraph (B) at the end of such subparagraph  
7 as follows:

8 “(B) The Administrator shall within six months of the  
9 date of enactment of this subparagraph establish a test pro-  
10 cedure to implement, beginning no later than model year  
11 1977, the authority of subparagraph (A) of this para-  
12 graph.”.

13 SEC. 27. Section 207 (a) (1) of the Clean Air Act is  
14 amended by adding a new sentence at the end thereof as  
15 follows: “The cost of any light duty motor vehicle part, de-  
16 vice, or component principally for emission control which in  
17 the instructions issued pursuant to subsection (c) (3) of this  
18 section is scheduled for replacement during the useful life of  
19 the vehicle in order to maintain compliance with regulations  
20 under section 202 of this Act and which has an expected  
21 retail price, including installation costs, greater than \$75,  
22 shall be included in the initial purchase price of the vehicle  
23 and shall be provided without cost to the ultimate purchaser  
24 or any subsequent purchaser at the time of such replace-  
25 ment.”.

1        SEC. 28. (a) Section 207 (a) of the Clean Air Act is  
2 amended by inserting “(1)” after “(a)” and by adding  
3 the following new paragraph at the end thereof:

4        “(2) In the case of a motor vehicle part or motor ve-  
5 hicle engine part, the manufacturer of such part may certify  
6 that use of such part will not result in a failure of the vehicle  
7 or engine to comply with emission standards promulgated  
8 under section 202 of this Act. Such certification shall be  
9 made only under such regulations as may be promulgated  
10 by the Administrator to carry out the purposes of subsection  
11 (b). The Administrator shall promulgate such regulations  
12 no later than one year after the date of the enactment of  
13 this paragraph. Before the effective date of such regulations  
14 all parts shall be deemed to have such certification.”.

15        (b) Section 207 (b) (2) of such Act is amended by  
16 adding the following at the end thereof: “No such warranty  
17 shall be invalid on the basis of any part used in the main-  
18 tenance or repair of a vehicle or engine if such part was  
19 certified as provided under subsection (a) (2) of this  
20 section.”.

21        SEC. 29. Paragraph (3) of subsection (c) of section  
22 207 of the Clean Air Act is amended to read as follows:

23        “(3) (A) The manufacturer shall furnish with each  
24 new motor vehicle or motor vehicle engine written instruc-  
25 tions for the proper maintenance and use of the vehicle or  
26 engine by the ultimate purchaser and such instructions shall

1 correspond to regulations which the Administrator shall  
2 promulgate.

3       “(B) The instruction under subparagraph (A) of this  
4 paragraph shall not include any condition on the ultimate  
5 purchaser’s using, in connection with such vehicle or engine,  
6 any component or service (other than a component or serv-  
7 ice provided without charge under the terms of the purchase  
8 agreement) which is identified by brand, trade, or corporate  
9 name; or directly or indirectly distinguishing between serv-  
10 ice performed by the franchised dealers of such manufac-  
11 turer or any other service establishments with which such  
12 manufacturer has a commercial relationship, and service  
13 performed by independent automotive repair facilities with  
14 which such manufacturer has no commercial relationship;  
15 except that the prohibition of this subsection may be waived  
16 by the Administrator if—

17       “(i) the manufacturer satisfies the Administrator  
18 that the vehicle or engine will function properly only if  
19 the component or service so identified is used in con-  
20 nection with such vehicle or engine, and

21       “(ii) the Administrator finds that such a waiver  
22 is in the public interest.

23       “(C) In addition, the manufacturer shall indicate by  
24 means of a label or tag permanently affixed to such vehicle  
25 or engine that such vehicle or engine is covered by a certifi-

1   cate of conformity issued for the purpose of assuring achieve-  
2   ment of emissions standards prescribed under section 202  
3   of this Act. Such label or tag shall contain such other infor-  
4   mation relating to control of motor vehicle emissions as the  
5   Administrator shall prescribe by regulation.”.

6       SEC. 30. Section 209 of the Clean Air Act is amended  
7   by adding the following new subsection:

8       “(d) Notwithstanding subsection (a) of this section,  
9   any State in which a region or portion thereof has been iden-  
10   tified pursuant to section 107 (d) (1) (A) of this Act may  
11   adopt and enforce for model year 1979 the emission stand-  
12   ards for light duty motor vehicles required for model year  
13   1980 under section 202 (b) (1) of this Act: *Provided*,  
14   That the State shows to the satisfaction of the Administrator  
15   that the adoption of the standard in 1979 is required to  
16   achieve any ambient air quality standard by 1982 and main-  
17   tain thereafter. Light duty motor vehicles offered for sale  
18   within such State shall be certified to comply with such  
19   standards in accordance with the procedures established  
20   under section 206 of this Act.”.

21       SEC. 31. Section 211 of the Clean Air Act is amended  
22   by adding a new subsection (e) as follows:

23       “(e) The Administrator shall conduct a study and re-  
24   port to Congress by July 1, 1977, on the emission of  
25   sulfur-bearing compounds from motor vehicles and motor

1 vehicle engines and aircraft engines. Such study and report  
2 shall include but not be limited to a review of the effects of  
3 such emissions on public health and welfare and an analysis  
4 of the costs and benefits of alternatives to reduce or eliminate  
5 such emissions (including desulfurization of fuel, short-term  
6 allocation of low sulfur crude oil, technological devices used in  
7 conjunction with current engine technologies, alternative  
8 engine technologies, and other methods) as may be required  
9 to achieve any proposed or promulgated emission standards  
10 for sulfur compounds.”.

11 SEC. 32. (a) Title II of the Clean Air Act is amended  
12 by adding at the end thereof the following new part:

13 “PART C—RAILROAD LOCOMOTIVE EMISSION  
14 STANDARDS

15 “SEC. 235. (a) (1) Within ninety days after the date  
16 of enactment of the Clean Air Amendments of 1976, the  
17 Administrator shall commence a study and investigation of  
18 emissions of air pollutants from railroad locomotives, loco-  
19 motive engines, and secondary power sources on railroad rolling  
20 stock, in order to determine—

21 “(A) the extent to which such emissions affect air  
22 quality in air quality control regions throughout the  
23 United States, and

24 “(B) the technological feasibility of controlling such  
25 emissions.

1       “(2) (A) Within one hundred and eighty days after  
2   commencing such study and investigation, the Administrator  
3   shall publish a report of such study and investigation and  
4   shall publish proposed emission regulations applicable to  
5   emissions of any air pollutant from any class or classes of  
6   locomotives, locomotive engines and secondary power sources  
7   on railroad rolling stock, which in his judgment cause or  
8   contribute to or are likely to cause or contribute to air pol-  
9   lution which endangers the public health or welfare.

10       “(B) Such proposed regulations shall include emission  
11   standards setting limits on air pollutant emissions which  
12   reflect the degree of emission reduction achievable through  
13   the application of the best available technology, taking into  
14   account the cost of compliance, as determined by the Admin-  
15   istrator. Such regulations may identify the type of technology  
16   available to achieve such reduction.

17       “(3) The Administrator shall hold public hearings  
18   with respect to such proposed regulations. Within ninety  
19   days after the issuance of such proposed regulations, he shall  
20   issue such regulations with such modifications as he deems  
21   appropriate. Such regulations may be revised from time to  
22   time.

23       “(b) Any regulation prescribed under this section (and  
24   any revision thereof) shall take effect after such period as  
25   the Administrator finds necessary (after consultation with

1 the Secretary of Transportation) to permit the development  
2 and application of the requisite technology, giving appro-  
3 priate consideration to the cost of compliance within such  
4 period.

5 “(c) Any regulations under this section, or amendments  
6 thereto, with respect to locomotives, locomotive engines, and  
7 secondary power sources on railroad rolling stock, shall be  
8 prescribed only after consultation with the Secretary of  
9 Transportation in order to assure appropriate consideration  
10 for safety.

11 “SEC. 236. The Secretary of Transportation, after con-  
12 sultation with the Administrator, shall prescribe regulations  
13 to insure compliance with all standards prescribed under  
14 section 235 by the Administrator. Such Secretary shall insure  
15 that all necessary inspections are accomplished and may  
16 execute any power or duty vested in him by any other pro-  
17 vision of law in the execution of all powers and duties vested  
18 in him under this section.

19 “SEC. 237. After the effective date of regulation under  
20 section 235 of this Act no State or political subdivision  
21 thereof may adopt or enforce any standard respecting emis-  
22 sions of any air pollutant from any railroad locomotives,  
23 locomotive engines, or secondary power sources on railroad  
24 rolling stock, unless such standard is identical to a standard

1 applicable to emissions prescribed by any regulation under  
2 this part.”

3 (b) Section 116 of the Clean Air Act is amended by  
4 striking out “and 233” and inserting in lieu thereof “233  
5 and 237”.

6 SEC. 33. Section 302 of the Clean Air Act is amended  
7 by adding five new subsections as follows:

8 “(i) The term ‘emission limitation’ means a require-  
9 ment established by a State or the Administrator which limits  
10 the quantity, rate, or concentration of emissions of air pollut-  
11 ants on a continuous basis, including a detailed schedule and  
12 timetable of compliance.

13 “(j) The term ‘schedule and timetable of compliance’  
14 means a schedule of remedial measures including an enforce-  
15 able sequence of actions or operations leading to compliance  
16 with an emission limitation, other limitation, prohibition, or  
17 standard.

18 “(k) The term ‘major emitting facility’ means any sta-  
19 tionary source of air pollutants which emits, or has the  
20 potential to emit, 100 tons per year or more of any air  
21 pollutant, except that for the purposes of section 110 (g) of  
22 this Act, the term is limited to the following types of such  
23 stationary sources: fossil-fuel fired steam electric plants of  
24 more than 250 million British thermal units per hour heat

1 input, coal cleaning plants (thermal dryers), kraft pulp  
2 mills, Portland Cement plants, primary zinc smelters, iron  
3 and steel mill plants, primary aluminum ore reduction plants,  
4 primary copper smelters, municipal incinerators capable of  
5 charging more than 250 tons of refuse per day, hydrofluoric,  
6 sulfuric, and nitric acid plants, petroleum refineries, lime  
7 plants, phosphate rock processing plants, coke oven batteries,  
8 sulfur recovery plants, carbon black plants (furnace process),  
9 primary lead smelters, fuel conversion plants, sintering  
10 plants, secondary metal production facilities, chemical process  
11 plants, fossil-fuel boilers of more than 250 million British  
12 thermal units per hour heat input, petroleum storage and  
13 transfer facilities with a capacity exceeding 300,000 barrels,  
14 taconite ore processing facilities, glass fiber processing plants,  
15 charcoal production facilities, and such other major emitting  
16 facilities as the Administrator determines to be significant  
17 potential sources of air pollutants.

18       “(1) The term ‘baseline air quality concentration’ re-  
19 fers to the ambient concentration levels which exist at the  
20 time of the first application for a permit in an area under  
21 section 110 (g) of this Act, based on air quality data avail-  
22 able in the Environmental Protection Agency or an air pol-  
23 lution control agency and such monitoring data as the per-  
24 mitting authority may require the permit applicant to  
25 submit. Such ambient concentration levels shall take into

1 account all projected emissions in, or which may affect, such  
2 area from any major emitting facility on which construc-  
3 tion commenced prior to January 6, 1975, but which has  
4 not begun operation by the date of the baseline air quality  
5 concentration determination. Emissions of sulfur oxides and  
6 particulate matter from any major emitting facility on which  
7 construction commenced after January 6, 1975, shall be  
8 accounted against the limitations on projected increases in  
9 pollutant concentrations established in paragraphs (2) and  
10 (5) of section 110 (g) of this Act.

11 “(m) The term ‘stationary source’ shall have the same  
12 meaning as such term has under section 111 (a) (3) of  
13 this Act.”.

14 SEC. 34. (a) Section 304 (a) of the Clean Air Act is  
15 amended—

16 (1) by striking out the period at the end of para-  
17 graph (2) and inserting in lieu thereof “, or”; and

18 (2) by inserting immediately after paragraph (2)  
19 the following new paragraph:

20 “(3) against any person who proposes to construct  
21 or constructs any new major emitting facility without  
22 a permit required under section 110 (g) of this Act or  
23 who is alleged to be in violation of any condition of  
24 such permit.”.

1 (b) Section 304 (f) of the Clean Air Act is amended by  
2 inserting "requirement," after "a" in paragraph (1).

3 SEC. 35. Section 307 of the Clean Air Act is amended  
4 by adding a new subsection as follows:

5 "(d) In any judicial proceeding under this Act in  
6 which the United States or an officer or employee thereof  
7 is a party (other than as an intervenor), any party other  
8 than the United States which prevails in such action shall  
9 recover from the United States the reasonable costs for  
10 such party's participation in such proceeding, including  
11 reasonable attorney's fees, expert witness fees, and the  
12 costs of any studies, analyses, tests, or engineering reports  
13 that the court finds were necessary to litigate such action.  
14 In any case in which such party prevails in part, the court  
15 shall have discretion to award such reasonable costs."

16 SEC. 36. (a) The Clean Air Act is amended by inserting  
17 a new section 314 as follows after section 313 and renumber-  
18 ing succeeding sections accordingly:

19 "EMPLOYEE PROTECTION

20 "SEC. 314. (a) No person shall fire, or in any other  
21 way discriminate against, or cause to be fired or discrimi-  
22 nated against, any employee or any authorized representa-  
23 tive of employees by reason of the fact that such employee  
24 or representative has filed, instituted, or caused to be filed  
25 or instituted any proceeding under this Act or under any

1 applicable implementation plan, or has testified or is about  
2 to testify in any proceeding resulting from the administra-  
3 tion or enforcement of the provisions of this Act or of any  
4 applicable implementation plan.

5       “(b) Any employee or a representative of employees  
6 who believes that he has been fired or otherwise discrimi-  
7 nated against by any person in violation of subsection (a)  
8 of this section may, within thirty days after such alleged  
9 violation occurs, apply to the Secretary of Labor for a  
10 review of such firing or alleged discrimination. A copy of  
11 the application shall be sent to such person who shall be  
12 the respondent. Upon receipt of such application, the Sec-  
13 retary of Labor shall cause such investigation to be made  
14 as he deems appropriate. Such investigation shall provide  
15 an opportunity for a public hearing at the request of any  
16 party to such review to enable the parties to present infor-  
17 mation relating to such alleged violation. The parties shall  
18 be given written notice of the time and place of the hearing  
19 at least five days prior to the hearing. Any such hearing  
20 shall be of record and shall be subject to section 554 of title  
21 5 of the United States Code. Upon receiving the report of  
22 such investigation, the Secretary of Labor shall make find-  
23 ings of fact. If he finds that such violation did occur, he  
24 shall issue a decision, incorporating an order therein and  
25 his findings, requiring the party committing such violation

1 to take such affirmative action to abate the violation as the  
2 Secretary of Labor deems appropriate, including, but not  
3 limited to, the rehiring or reinstatement of the employee or  
4 representative of employees to his former position with com-  
5 pensation. If he finds that there was no such violation, he  
6 shall issue an order denying the application. Such order  
7 issued by the Secretary of Labor under this subparagraph  
8 shall be subject to judicial review in the same manner as  
9 orders and decisions of the Administrator are subject to  
10 judicial review under this Act.

11 “(c) Whenever an order is issued under this section to  
12 abate such violation, at the request of the applicant, a sum  
13 equal to the aggregate amount of all costs and expenses (in-  
14 cluding the attorney’s fees) as determined by the Secretary  
15 of Labor, to have been reasonably incurred by the applicant  
16 for, or in connection with, the institution and prosecution of  
17 such proceedings, shall be assessed against the person com-  
18 mitting such violation.

19 “(d) This section shall have no application to any em-  
20 ployee who, acting without direction from his employer (or  
21 his agent) deliberately violates any requirement of an appli-  
22 cable implementation plan approved or promulgated under  
23 section 110 of this Act, a new source performance standard  
24 under section 111 of this Act, a standard for hazardous emis-  
25 sions under section 112 of this Act, any requirement relating

1 to inspections under section 114 of this Act, or any other  
2 prohibition or limitation established under this Act.

3 “(e) The Administrator shall conduct continuing eval-  
4 uations of potential loss or shifts of employment which  
5 may result from the administration or enforcement of the  
6 provision of this Act and applicable implementation plans,  
7 including where appropriate, investigating threatened plant  
8 closures or reductions in employment allegedly resulting  
9 from such administration or enforcement. Any employee  
10 who is discharged, or laid off, threatened with discharge  
11 or layoff, or otherwise discriminated against by any person  
12 because of the alleged results of such administration or  
13 enforcement, or any representative of such employee, may  
14 request the Administrator to conduct a full investigation of  
15 the matter. The Administrator shall thereupon investigate  
16 the matter and, at the request of any party, shall hold public  
17 hearings on not less than five days’ notice, and shall at such  
18 hearings require the parties, including the employer involved,  
19 to present information relating to the actual or potential  
20 effect of such administration or enforcement on employment  
21 and on any alleged discharge, layoff, or other discrimination  
22 and the detailed reasons or justification therefor. Any such  
23 hearing shall be of record and shall be subject to section 554  
24 of title 5 of the United States Code. Upon receiving the  
25 report of such investigation, the Administrator shall make

1 findings of fact as to the effect of such administration or  
2 enforcement on employment and on the alleged discharge,  
3 layoff, or discrimination and shall make such recommenda-  
4 tions as he deems appropriate. Such report, findings, and  
5 recommendations shall be available to the public. Nothing in  
6 this subsection shall be construed to require or authorize the  
7 Administrator or any State to modify or withdraw any  
8 standard, limitation, or any other requirement of this Act  
9 or any applicable implementation plan.”

10 (b) Section 114 of the Clean Air Act is amended:

11 (1) To amend paragraph (iii) of subsection 114 (a)  
12 to read as follows:

13 “(iii) carrying out section 119, 303, or 314.”

14 (2) To amend paragraph (2) of subsection 114 (a)  
15 to strike the “and” at the end of section 114 (a) (2) (A) ;  
16 to change the period at the end of section 114 (a) (2) (B)  
17 to a comma; and inserting the following:

18 “and (C) may at reasonable times have access to  
19 and copy any employer’s records relating to matters  
20 being investigated pursuant to section 314.”.

21 SEC. 37. The Clean Air Act is amended by inserting  
22 a new section 315 as follows after new section 314 and  
23 renumbering succeeding sections accordingly:

1 "NATIONAL COMMISSION ON AIR QUALITY

2 "SEC. 315. (a) There is established a National Commis-  
3 sion on Air Quality which shall study and report to the  
4 Congress on—

5 "(1) the economic, technological, and environ-  
6 mental consequences of achieving or not achieving the  
7 purposes of this Act and programs authorized by it;

8 "(2) available alternatives, including enforcement  
9 mechanisms to protect and enhance the quality of the  
10 Nation's air resources so as to promote the public health  
11 and welfare and to achieve the other purposes of the  
12 Act, including achievement and maintenance of national  
13 ambient air quality standards and prevention of signifi-  
14 cant deterioration of air quality;

15 "(3) the technological capability of achieving and  
16 the economic, energy, and environmental impacts of  
17 achieving or not achieving required emission control  
18 levels for mobile sources of oxides of nitrogen (including  
19 the research objective of 0.4 gram per vehicle mile) in  
20 relation to and independent of regulation of emissions of  
21 oxides of nitrogen from stationary sources;

22 "(4) air pollutants not presently regulated, which  
23 pose or may in the future pose a threat to public health  
24 or public welfare and options available to regulate  
25 emissions of such pollutants;

1           “(5) the adequacy of research, development, and  
2       demonstrations being carried out by Federal, State,  
3       local, and nongovernmental entities to protect and  
4       enhance air quality;

5           “(6) the ability of (including financial resources,  
6       manpower, and statutory authority) Federal, State, and  
7       local institutions to implement the purposes of the Act.

8       “(b) Such Commission shall be composed of ~~fifteen~~<sup>12</sup>  
9       members, including the chairman and the ranking minority  
10      Member of the Senate Committee on Public Works and the  
11      House Committee on Interstate and Foreign Commerce, who  
12      shall serve on such Commission ex officio and without vote,  
13      and ~~eleven~~<sup>12</sup> members of the public appointed by the President.  
14      The Chairman of such Commission shall be elected from  
15      among its members.

16       “(c) The heads of the departments, agencies, and in-  
17      strumentalities of the executive branch of the Federal Gov-  
18      ernment shall cooperate with the Commission in carrying  
19      out the requirements of this section, and shall furnish to the  
20      Commission such information as the Commission deems nec-  
21      essary to carry out this section.

22       “(d) A report, together with any appropriate recom-  
23      mendations, shall be submitted to the Congress on the results  
24      of the investigation and study concerning section (a) (3)  
25      of this section no later than March 1, 1977, in order that Con-

1 gress may have this information in a timely fashion if it  
2 deems further changes are needed in the requirements for  
3 control of emissions of oxides of nitrogen under this Act.

4 “(e) A report shall be submitted with regard to all  
5 other Commission studies and investigations, together with  
6 any appropriate recommendations, not later than three years  
7 after the date of enactment of this section.

8 “(f) The members of the Commission who are not  
9 officers or employees of the United States, while attending  
10 conferences or meetings of the Commission or while other-  
11 wise serving at the request of the Chairman shall be entitled  
12 to receive compensation at a rate not in excess of the max-  
13 imum rate of pay for grade GS-18, as provided in the Gen-  
14 eral Schedule under section 5332 of title V of the United  
15 States Code, including traveltime and while away from their  
16 homes or regular places of business they may be allowed  
17 travel expenses, including per diem in lieu of subsistence  
18 as authorized by law (5 U.S.C. 73b-2) for persons in the  
19 Government service employed intermittently.

20 “(g) There is authorized to be appropriated, for use in  
21 carrying out this section, not to exceed \$17,000,000.

22 “(h) In the conduct of the study, the Commission is  
23 authorized to contract with nongovernmental entities that  
24 are competent to perform research or investigations in areas  
25 within the Commission’s mandate, and to hold public hear-

1 ings, forums, and workshops to enable full public par-  
2 ticipation.”.

3 SEC. 38. Section 318 of the Clean Air Act, as redesign-  
4 nated by this Act, is amended to read as follows:

5 “AUTHORIZATION OF APPROPRIATIONS

6 “SEC. 318. There are authorized to be appropriated to  
7 carry out this Act, other than sections 103 (f) (3) and (d),  
8 104, 110 (h) (8), 150 through 159, 212, 315, and 403,  
9 not to exceed \$300,000,000 for the fiscal year ending June  
10 30, 1976, \$75,000,000 for the transition period ending  
11 September 30, 1976, and \$200,000,000 for each of fiscal  
12 years 1977 and 1978. There are authorized to be appro-  
13 priated to carry out section 110 (h) (8) of this Act \$75,-  
14 000,000 to be available until expended.”.

15 SEC. 39. The Federal Trade Commission shall under-  
16 take a study of the impact on competition of any warranty  
17 required to be provided pursuant to the Clean Air Act, tak-  
18 ing into account the objectives of the Act. Such study shall  
19 include public hearings. Such study shall include an analysis  
20 of any measures implemented by the Administrator of the  
21 Environmental Protection Agency to prevent or diminish  
22 the impact of such warranties on competition and shall in-  
23 clude a finding with respect to whether or not a significant  
24 impact on competition would result from such warranty if  
25 the warranty applied for the actual useful life of the vehicle.

1 Such study shall be undertaken primarily by the Bureau of  
2 Competition in consultation with the Bureau of Consumer  
3 Affairs, the Department of Justice, and the Environmental  
4 Protection Agency. The report of such study shall be sub-  
5 mitted to the Committee on Public Works of the Senate  
6 and the Committee on Interstate and Foreign Commerce  
7 of the House of Representatives no later than eighteen  
8 months after the enactment of the Clean Air Amendments  
9 of 1976.

10 SEC. 40. The Congress finds that emissions of oxides of  
11 nitrogen are projected to increase dramatically in coming  
12 years and that inadequate controls are currently projected for  
13 stationary sources of oxides of nitrogen, and directs the  
14 Administrator to study and report to the Congress within  
15 one year on the possible creation of a system of penalties on  
16 emissions of oxides of nitrogen. Such penalties shall be de-  
17 signed for new major emitting facilities, or existing major  
18 emitting facilities, or both, to encourage the development of  
19 more effective systems and technologies for control of emis-  
20 sions of oxides of nitrogen. Any proposed penalty system  
21 recommended by the Administrator should be planned to  
22 terminate, for each category of facilities, at such time as the  
23 Administrator is satisfied that adequate technology exists and  
24 is available to control oxides of nitrogen to the greatest extent  
25 practicable for that category of facilities, and that such con-

1 trols are being, or will be, installed on all such facilities. As a  
2 part of such report, the Administrator shall also recommend  
3 a system by which major emitting facilities would be required  
4 to compile records to determine any such emission penalty  
5 that would be due.

6 SEC. 41. (a) No suit, action, or other proceeding  
7 lawfully commenced by or against the Administrator or any  
8 other officer or employee of the United States in his official  
9 capacity or in relation to the discharge of his official duties  
10 under the Clean Air Act, as amended, as in effect immedi-  
11 ately prior to the date of enactment of this Act shall abate  
12 by reason of the taking effect of the amendments made by  
13 this Act. The court may, on its own motion or that of  
14 any party made at any time within twelve months after  
15 such taking effect, allow the same to be maintained by or  
16 against the Administrator or such officer or employee.

17 (b) All rules, regulations, orders, determinations, con-  
18 tracts, certifications, authorizations, delegations, or other  
19 actions duly issued, made, or taken by or pursuant to the  
20 Clean Air Act, as amended, as in effect immediately prior to  
21 the date of enactment of this Act, and pertaining to any  
22 functions, powers, requirements, and duties under the Clean  
23 Air Act, as amended, as in effect immediately prior to the  
24 date of enactment of this Act, and not suspended by the  
25 Administrator or the courts, shall continue in full force

1 and effect after the date of enactment of this Act until  
2 modified or rescinded in accordance with the Clean Air Act  
3 as amended by this Act.

4 (c) Nothing in this Act nor any action taken pursuant  
5 to this Act shall in any way affect any requirement of an  
6 approved implementation plan in effect under section 110 of  
7 this Act or any other provision of the Act in effect under the  
8 Clean Air Act before the date of enactment of this section  
9 until modified or rescinded in accordance with the Clean Air  
10 Act as amended by this Act.

94TH CONGRESS }  
2d Session }

SENATE

{ REPORT  
No. 94-717

CLEAN AIR AMENDMENTS OF 1976

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REPORT  
OF THE  
COMMITTEE ON PUBLIC WORKS  
UNITED STATES SENATE  
TOGETHER WITH  
MINORITY AND INDIVIDUAL VIEWS  
TO ACCOMPANY  
S. 3219



MARCH 29, 1976.—Ordered to be printed

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U.S. GOVERNMENT PRINTING OFFICE

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## Calendar No. 685

94TH CONGRESS }  
2d Session }

SENATE

{ REPORT  
No. 94-717

## CLEAN AIR AMENDMENTS OF 1976

MARCH 29, 1976—Ordered to be printed

Mr. MUSKIE, from the Committee on Public Works,  
submitted the following

## REPORT

together with

## MINORITY AND INDIVIDUAL VIEW

To accompany S. 3219]

The Committee on Public Works, reports an original bill (S. 3219), to amend the Clean Air Act, as amended, and recommends that the bill do pass.

## GENERAL STATEMENT

Since enactment of the 1970 Clean Air Amendments, the Subcommittee on Environmental Pollution has held fifty-six days of hearings to review the implications of that Act. This legislation addresses many of the issues raised during those hearings, in court proceedings, by administrative rule-making, and by legislative proposals from the President and various Members of the Senate.

The Committee discussed these initiatives and issues within a framework provided by three fundamental concerns:

The need to augment the responsibility, authority, and effectiveness of State and local air pollution control programs.

The need to accentuate technological innovation in the control of air pollutants.

The need to be certain that the present primary and secondary ambient air quality standards, control requirements, and deadlines are adequate to protect public health and welfare.

This framework was the focus for evaluating many conflicting and dissenting viewpoints. It is essential that the actions of the Committee and that the provisions of this legislation be viewed in the context of these principles. And it is essential that these needs be fulfilled.

The authority of States and localities to implement air pollution control programs within the framework of a national policy must be encouraged. The framework proposed in this bill is flexible in terms of the discretion in choosing methods for attaining firm national goals. States and localities are given broad discretion to make decisions, while maintaining the minimum national air quality baselines designed to protect health and welfare, prevent discrimination among States, protect national resources within States, and provide guidance on the technical and the economic implications of various national policies.

The problem of air pollution exists at the State and local level. That is where the public understands the problem. That is where the resources must be directed. The Federal Government has a responsibility to provide support for those regulatory activities, but it need not have an actual presence in all regulatory activities.

Public problems must be solved at the level of government most capable of dealing with them. It is for this reason that the Committee adopted amendments which keep the pressure on the auto industry to clean up auto emissions at the earliest practicable date. Vehicle emissions are a national problem. The solution lies with national standards.

Proper implementation of the amendments in this bill will significantly enhance the Federal-State relationship and will provide the States and localities with the flexibility they need, while at the same time providing a mechanism to assure that national policy is implemented.

The Federal role must be one of support rather than control. The Federal Government does not have and will not have the resources required to do an effective job of running the air pollution control programs of the States. And yet the Federal Government can and must provide the technical information and enforcement assistance that States and localities need. Fulfilling this latter role effectively will protect and enhance air quality more than fulfilling the former role inadequately.

This Act gives the States and communities new tools and more time which can be used effectively to achieve the objectives of the Act. The resources and time must not be dissipated.

The bill is precise in its guidance for implementation of its provisions and thereby minimizes the need for additional Federal regulations. The bill sets forth a specific method by which clean air areas should be protected, the basic measure against which deterioration is to be determined, and the programs that States should have in place to prevent significant deterioration. This guidance is intended to supercede broad, unnecessary and perhaps conflicting regulations.

The Environmental Protection Agency must minimize any disruption that might be caused in implementing the Act. It should not "rediscover" the basis for the regulations, while modifying those regulations. A similar problem occurred after the enactment of the 1972 Federal Water Pollution Control Act. In that instance, the Agency frequently stopped programs completely while new regulations were drafted, revised, and promulgated. The effect of such a hiatus can be very detrimental to a program. The Agency must avoid any such pattern in complying with the 1976 air amendments.

The legislation addresses four issues that are basic to the structure and integrity of the Clean Air Act: the prevention of significant

deterioration, compliance deadlines, auto emissions standards, and transportation controls.

*Prevention of Significant Deterioration.*—The first major policy question involves the protection against significant deterioration of air that is already clean.

The 1967 Air Quality legislation required improvements in the quality of dirty air and protection of clean air against future deterioration. The 1970 Act did not alter this policy. As a result of administrative and judicial decisions, the Environmental Protection Agency created a regulatory structure to protect air quality in clean air areas.

Presented with arguments ranging from a do-nothing approach to repeal, the Committee determined that the implications of that policy and procedures are too vast to be left to the administrative or judicial process. Congress has a responsibility to delineate a policy for protecting clean air as it had a responsibility in the previous Act to spell out the policy to restore clean air.

This legislation defines "significant deterioration" in all clean air areas as a specified amount of additional pollution. Specified Federal lands having unique air quality related values are further protected. This definition is intended to prevent any major decline in air quality currently existing in clean air areas and will provide a margin of safety for the future. This will be made easier by a mandatory use of the best available control technology as set forth in the bill.

This policy will be implemented by the States. Judgments will be made on a case-by-case basis, taking into account local factors. But in no case will deterioration be permitted to a level that would exceed any national ambient air quality standard.

The Administrator's role is one of monitoring State actions. States have authority to issue construction permits to new major emitting facilities in clean air areas. The Administrator thus could go to court to stop a permit for activities which would exceed the increments of pollution or which otherwise did not comply with the requirements of this section, including use of best available control technology. But the Administrator could not and should not attempt to burden this section with unnecessary regulations and guidelines.

The Administrator should tell the States the basis for his review. When asked, he should become involved at an early date in particularly difficult permit applications so that the States and localities will know of any potential differences. But under no conditions may he use this authority to force land use or site selection decisions unrelated to air quality.

The Committee has also asserted a Federal interest in protecting air quality over certain areas of Federal ownership, by a separate test. The potential activity outside those Federal lands—such as national parks and wilderness areas and international parks—could be prohibited if it would impair the air quality values associated with those Federal lands.

The policy is clear: there is a uniform national standard against which deterioration is judged; there is a national requirement that each new major facility to be located in a clean air area install the best available control technology; and there is a national interest in the protection of air quality-related values in national parks and wilderness areas.

*Compliance Deadlines.*—The 1970 Act required that most sources of pollution achieve emission limitations related to public health standards by mid-1975, with one possible two-year extension. While the majority of the Nation's 20,000 major sources of pollution are in compliance or on approved compliance schedules, several thousand major industrial sources will not meet the deadlines of the Act.

After considering several approaches to deal with this problem the Committee has concluded that the most effective way to handle these complexities is to require sources to comply as expeditiously as practicable, with no source delaying final compliance with applicable emission limitations imposed by the States beyond January 1, 1979. To establish equity among those who have complied and those who have failed, there will be an automatic penalty, once the delay period expires. The penalty is to be paid monthly and will be based on the amount needed to cancel all monetary benefits of not investing in pollution control.

*Auto Standards.*—The 1970 Act prohibited the sale of cars that were not essentially free of pollution by the 1975 model year. The Congress in the winter of 1973-74 extended for one year the date for attainment of the statutory automobile emission standards and authorized the Administrator of the Environmental Protection Agency to extend that deadline for one further year, if justified. At the time, the Administrator of EPA said there was no technical justification for the delay. But the Congress acted in part because of the potential danger of sulfuric acid emissions from cars equipped with catalytic converters. There appeared to be a need to evaluate the risk of sulfates before further levels of control were imposed. That risk is still being evaluated. Evidence assembled by EPA to date suggests that the risk is minimal.

The automobile industry has already received a moratorium of three years, to 1978, from the compliance date written into the 1970 Act: a first year (to 1976) by administrative action allowed by the 1970 Act, a second year (to 1977) by legislative action, and a third year (to 1978) by administrative action.

The President, strongly supported by the automobile industry, has proposed a further moratorium through model year 1981 at the present 1975 national standards. The Committee considered this and other proposals within the context of the effect on human health, the sulfate controversy, the availability of requisite technologies and their impacts on energy use, the economic strength of the auto industry, the effects of delay on local transportation control plans, and the need to maintain momentum toward effective control of air pollutants.

Leaders of the industry and the United Auto Workers union advocated various delays to provide the industry with more time to make any adjustments necessary to mesh the demands for fuel economy with those for emission control. The Committee reviewed various studies and findings of the National Academy of Sciences, which showed that the emissions goals set in the 1970 Act for cars were generally justified by public health data. The Academy also concluded that the technologies could be expected to be available to meet those goals, with the costs and timing varying depending on which technological option was employed. The Committee considered the views of local officials, who argued that delays in meeting the statutory auto standards would magnify their task of achieving ambient air

quality that was not detrimental to health. The Committee called for and received technical assistance and evaluation from many sources, including the Environmental Protection Agency, the Department of Transportation and the industry itself.

The Committee then made a balancing judgment.

This legislation relaxes significantly the final, or statutory, requirement for control of oxides of nitrogen, the pollutant that many argue is the most difficult to control as a part of an effective auto emission controls program. The new standard reflects the degree of control needed from automobiles, in relation to stationary sources of oxides of nitrogen, as well as the technical limitations associated with control of that pollutant. The issue of stationary source control of oxides of nitrogen is critical and is discussed later in this report.

The Committee then established a mechanism to phase-in clean car controls so that full, national compliance is achieved in the 1980 model year, four years later than the date set in the 1970 Act. In 1979, the statutory hydrocarbon and carbon monoxide standards must be met by all cars. In addition, the industry will be required to produce 10 percent of its production to the full 1980 statutory standards; 90 percent of the cars would be built to the less stringent nitrogen oxides level which is to be achieved in model year 1977. This year of phase-in provides an opportunity to evaluate the implications of new technologies.

Some areas of the Nation may not wish to wait until the 1980 models to have clean cars. To meet this potential, the bill provides States that need transportation controls with the opportunity to require that cars sold in those States meet the 1980 statutory levels during the 1979 model year. Such cars could become part of the 10 percent program.

What is the implication of this approach to achieve a new, reasonable level of achievement by 1980? While there is concern over fuel economy, there is reason to believe that any fuel penalty can be minimized with these standards. This is particularly true if the industry combines the more effective systems now in design, rather than using a patch-work system of add-on devices. Various Federal agencies agree that several combinations of technologies exist that will prevent fuel economy losses while providing maximum emission reductions.

Most important, this bill continues the essential progress toward environmental improvement. The pollution that hangs over many of our major cities will not be lessened until cleaner cars are produced. Of course, there will be costs, but costs that would run to less than 5 percent of the price of a new car (as compared to nearly 10 percent for air conditioning, for example). But those costs have public health benefits. They also have benefits beyond pollution control. The catalyst technology added to the 1975 and 1976 models made possible sharp increases in fuel economy, compared to the two previous model years, with lower maintenance requirements.

While there has been an argument over the correlation between auto emission standards and measured air quality, the Committee remains convinced that tighter controls are essential to the attainment of primary ambient air quality standards in a reasonable time.

*Transportation Controls.*—The fourth major air pollution issue confronting the Nation is one that is integrally related to auto emissions.

The deadlines established by the Clean Air Amendments of 1970 for protecting human health from the adverse effects of air pollution required that many communities consider land use and transportation adjustments in addition to emission limitations to achieve those health standards, and to maintain them in the future. To carry out that responsibility, the Environmental Protection Agency was required by the courts to promulgate transportation control plans after many of the Nation's major cities failed to develop adequate plans themselves. These plans contained such controversial elements as parking fee surcharges, auto emissions control retrofit, and even gas rationing. These were deemed to be the only means of achieving healthful air within the 1975-77 statutory deadlines, albeit with significant potential disruptions of local economies developed around the use of the private automobile. The Committee studied the extent to which the proposals of the Environmental Protection Agency were reasonable, and it determined that many imposed vast economic and social costs, for relatively small improvement in the quality of the environment.

Various mechanisms to stimulate transportation planning were studied by the Committee, along with various incentives for change and strategies to achieve health-related standards. But the air quality and transportation systems in the Nation's major cities are so inextricably related to private automobile use that few transportation control programs could be reasonably and effectively applied to meet the deadlines of the 1970 Act, particularly since the auto emission standard deadline had been relaxed several years.

This bill establishes a policy, initiated by the Administrator of the Environmental Protection Agency, to require the adoption as rapidly as practicable of all reasonable transportation control measures in areas where such measures are necessary. If an area is implementing such measures and all requirements for stationary sources that emit mobile source related pollutants, but still cannot meet deadlines, it may be given a five-year extension. A second five-year extension is available for the few most difficult problem areas. This will enable communities to take advantage of the introduction of new, clean-air cars, and to give them time to develop innovative, alternative transportation strategies, while not slowing the early use of those alternatives which do not impose economic or social hardship. The Committee recommends this delay with reluctance, because it recognizes that in the short term the health of the public remains tied almost exclusively to the progress that is achieved by the auto industry in producing cleaner vehicles.

The Federal Government does not have the capacity to develop nor would it gain the necessary public support for federally-imposed transportation control programs. Where structural changes are needed in community transportation patterns, those changes can only come about with major involvement of and support from the people affected by them.

These specific amendments are discussed in greater detail in the body of this report.

*Other Issues.*—In addition, the Committee has sought to resolve a number of other issues pending before the courts and the Administrator in a manner consistent with the purposes and intent of the basic Clean Air Act. For example, the Committee has clarified

the intent of the 1970 Act that emission limitations must be achieved through the use of permanent, continuous controls. The Committee has adopted an amendment to protect the economic viability of non-ferrous smelters. It adopted an amendment to allow expansion of major plants in polluted areas if the expansion leads to a greater reduction in pollution levels. The Committee has adopted an amendment seeking to protect the Earth's ozone layer from halo-carbon emissions. There is also a series of amendments to protect the automotive aftermarket parts and service industry from any potential anti-competitive impacts of the auto emission warranty requirements. The Committee has voted to require rigorous control of heavy-duty vehicles and motorcycles, which have become an increasing pollution problem.

It has been argued that some provisions of the Clean Air Act require the Federal Government to determine local land-use. That interpretation is incorrect. Land use questions must be resolved at the State and local level. The exception may only occur when the State fails to act, and there is a demonstrated inadequacy in the State program to maintain a health-related level of clean air. And even this restricted authority does not extend to land-use planning in any conventional sense.

It is a local responsibility to review land use decisions to determine whether or not the air pollution by-products of those decisions will interfere with the achievement or the maintenance of primary ambient air quality standards. Thus there should be State and/or local pre-construction review mechanisms for areas where the health of people may be adversely affected by air pollution resulting from land use decisions. That pre-construction review mechanism should provide a means to determine the extent to which a particular decision to construct a facility will add air pollution that would interfere with the maintenance of primary ambient air quality standards or cause further deterioration from such air quality standards. The Federal Government may substitute its jurisdiction in this area only as a last resort and only after a careful balancing of the economic, energy, and environmental impact of the federally proposed alternative.

This is not to say that the Federal Government may not have to exercise its authority. The Committee expects that State and local governments will take advantage of the renewed opportunity proposed by these amendments to adopt the necessary review mechanisms so as to eliminate even the suggestion of a Federal presence in this area.

The way to avoid federalization of this program is effective and aggressive State and local action. The Clean Air Act of 1970 and its predecessor, the Air Quality Act of 1967, provided the States and their local agencies with the authorizations necessary to do the job, recognizing the national responsibility to protect public health and clean air where it is still clean.

As State authority and flexibility is vital to an effective program, so too is a program that is built on standards that are sound and a technology that is improving. These remain fundamental to the Committee's actions.

The 1970 Act required the development and attainment of two levels of ambient air quality. The initial level was the "primary standard," which must be based upon a requirement "to protect the

public health," allowing for "an adequate margin of safety." The national "secondary standards" must be set to "protect the public welfare from any known or anticipated adverse effects."

A number of witnesses suggested that EPA should be required to re-examine and republish ambient air quality standards on a regular basis. Existing law requires that the Administrator re-examine the basis for air quality standards on a continuous basis, and it authorizes the Administrator to republish and promulgate those standards when new information suggests the need for that action. Because the level of the ambient air quality standards are the trigger mechanism for State implementation plans and regulatory strategy, those levels are crucial to an effective program.

Considerable information was received that the primary and secondary ambient air quality standards, as presently promulgated, failed to provide the protection required by law.

The Committee considered a mandatory reconsideration of those standards but chose rather, through this report, to direct the Administrator to give specific attention under existing authority to revising the NO<sub>x</sub> standard, especially a short term NO<sub>2</sub> standard, and to reviewing the secondary standard for sulfur dioxide. In the latter case, the Committee believes that the Administrator must give primary attention to restoration of an annual mean and possibly changing other aspects of the secondary ambient air quality standard for sulfur dioxide. An unresolved issue is the long-range transport of pollutants and the potential of adverse effects from sulfur dioxide and its by-products even when the present secondary standards are met.

It also became evident that secondary standards may not meet the mandate now in the law to protect against "effects on welfare", which is defined this way:

(h) All language referring to effects on welfare includes, but is not limited to, effects on soils, water, crops, vegetation, man-made materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being.

The Administrator should review and appropriately revise any secondary standards that fail to meet the test of this definition and report to the Congress on the need and implications of such revision.

This bill does not require the republication of existing standards. Such action would have substituted the judgment of the Committee for the judgment of medical and scientific experts. Second, such action might be considered a mandate calling into doubt the implementation plans which were triggered by existing air quality standards. It is more appropriate that the Administrator continue on the course established by the existing law and review the data base for all existing air quality standards on a continuous basis, revising such standards where new information suggests the need for that alternative.

Another issue relates to the adequacy of monitoring data.

While many States have made a significant monitoring investment, information on the current levels of air quality, both in urban and rural areas, is inadequate. The task of developing this information is

time consuming and expensive. The Environmental Protection Agency must expand its commitment to the process of developing information on background air quality in clean air areas and the current levels of air quality in urban-industrial centers, preferably in cooperation with the States.

Basic to any effective program of pollution control with economic growth must be improvements in the technology of pollution control.

Technological improvements have enabled this Nation to establish the greatest industrial plant in the world, providing American workers with the highest pay and best working conditions, in return for high productivity.

If this Nation is to continue to expand and to improve our standard of living—as it must—America must continue to innovate. Better, more economical methods must be found to achieve given goals, whether that involves the manufacturing of automobiles or the control of pollution from the plants where those cars are built.

In passing the Clean Air Amendments of 1970, the Congress for the first time imposed a requirement for specified levels of control technology. The Section 111 Standards of Performance for New Stationary Sources required the use of the “best system of emission reduction which (taking into account the cost of achieving such reduction) the Administrator determines has been adequately demonstrated.” This requirement sought to assure the use of available technology and to stimulate the development of new technology.

The 1970 Amendments adopted an approach that was intended to stimulate the development of new and better technology. Standards have been set on the basis of public health and welfare protection. If technology does not exist to meet emission limitations necessary to achieve such standards, then technology must be developed.

A number of important developments have occurred in technology innovation as a result of the momentum created by the 1970 Amendments. The Environmental Protection Agency has determined that stack gas cleaning equipment has now become available for cleaning sulfur oxide emissions from powerplants and other stationary sources; some industries have challenged that determination. Many plants using hydrocarbons and other volatile solvents are now adopting technology which uses dry substitutes or water based processes. These are but two examples of the positive changes that have occurred as a result of the approach taken in the 1970 amendments.

Throughout this bill there is a philosophy of encouragement of technology development. It is an encouragement to induce, to stimulate, and to augment the innovative character of industry in reaching for more effective, less-costly systems to control air pollution.

Among the provisions affecting technology are the following:

1. The requirements that establish a research objective for the control of oxides of nitrogen from automobiles.
2. The requirement for the use of best available control technology on new trucks, buses, and motorcycles in 1979 and 1980, taking costs into account.
3. The national railroad emission standards of best available control technology, taking costs into account.
4. The provision in the compliance date extension section that allows two extra years for control, if control will be achieved by

a new and innovative system or technique that results in more effective controls or sharply lower costs.

5. The study of emission penalties for oxides of nitrogen as a way to encourage new technologies.

6. The provision allowing plant expansion in regions where air quality standards are exceeded, so long as the emitter installs best available technology and assures that total emissions from the plant "will be sufficiently less than the total allowable emissions from the existing source . . . so as to represent reasonable further progress toward attainment of the applicable standard." This means that the better the control system on the new facility, the less retrofit work will be necessary on existing facilities to reduce the overall pollution level.

7. Establishment of the National Commission on Air Quality, which will undertake a study of tax policy as a tool to encourage improved technology.

8. Possibly most important is that portion of the bill that establishes a system already discussed to prevent significant deterioration of air quality.

This procedure to prevent significant deterioration requires a case-by-case determination by the States of best available control technology for any new major emitting facility that will be built in a clean-air region. Thus, each State is free to—and encouraged to—examine and impose requirements for the use of the latest technological developments as a requirement in granting the permit. This approach should lead to rapid adoption of improvements in technology as new sources are built, not the stagnation that occurs when everyone works against a single national standard for new sources.

The bill, then, includes a second level of protection, and a second stimulant to improved controls. By imposing a ceiling on incremental pollution growth, setting an overall limit on emissions at any site, many industries can be expected to develop new, more effective techniques of control to meet that absolute constraint, while building a plant of maximum capacity. The more effective the controls, the larger the allowable plant.

It is anticipated that industry, the Environmental Protection Agency, and the States will work together to develop and analyze the new production processes, systems, and techniques.

## HEARINGS

The Subcommittee on Environmental Pollution held oversight hearings on the implementation of the Clean Air Act of 1970 annually for the past four years. In 1972, 13 days of hearings were held to examine the adequacy of EPA's assistance to the States in developing their State implementation plans, the extent to which those plans would achieve health-related air quality standards, the adequacy of new source performance standards for stationary sources, and the efforts of the auto industry to achieve the mandated auto emission reductions by 1975.

In 1973, the Subcommittee and the Full Committee held a total of 17 days of hearings. Twelve days were devoted to an examination of

EPA Administrator Ruckelshaus' decision to delay the 1975 statutory deadline for hydrocarbon and carbon monoxide standards for one year. Other issues examined in 1973 were the potential sulfate emissions from catalyst-equipped cars, preventing significant deterioration in clean air areas, and the implications of the fuel shortage for compliance with clean air requirements. A one-day field hearing was also held in Riverside, California on the transportation control plan promulgated for the South Coast Air Basin.

During 1974, 12 days of oversight hearings were held. Issues examined included stationary source compliance, control technology, State programs, preventing significant deterioration in clean air areas, secondary standards, implementation of transportation controls, new source performance standards, land use, coal conversion, citizen suits, deadlines, and the adequacy of the ambient air quality standards. One day of these hearings was held in Los Angeles, California.

In 1975, the Subcommittee held 14 days of hearings related to the health basis for the ambient standards, preventing significant deterioration in clean air areas, stationary source control options, enforcement, Federal preemption, transportation controls and land use, compliance with the statutory auto emission standards, alternative engine and emission control systems, and alternative mobile source control strategies and timetables.

Following completion of hearings in May 1975, the Subcommittee began to consider amendments to the Clean Air Act on June 17, 1975. After 24 mark-up sessions, the Subcommittee reported a bill to the Public Works Committee on November 3, 1975. The Full Committee subsequently met in mark-up sessions 24 times and ordered reported to the Senate amendments to the Clean Air Act of 1970, as amended, on February 5, 1976.

In total, 56 days of oversight hearings have been held since the passage of the Clean Air Act of 1970. Forty-eight mark-up sessions have been held on these amendments and over 60 recorded votes taken on them.

## DISCUSSION OF INTENT

### TITLE I

#### PROGRAM SUPPORT GRANTS (SEC. 1)

##### SUMMARY

This section amends section 105 of existing law. A State air pollution agency whose budget is reduced as part of an overall State budget reduction shall not lose its Federal grants under the existing requirement that such Agency must maintain its level of effort from a previous year in order to receive Federal grants.

##### DISCUSSION

Section 105 of the Clean Air Act contains requirements which are designed to insure that State support grants for air pollution control programs do not allow the substitution of Federal funds for State funds. It has been the intent of the law that Federal funds should be used in addition to State funds in order to expand programs.

Existing law requires cutoff of Federal funds if State support for air pollution programs declines. The reported bill contains a provision modifying this requirement. The modification removes such a cutoff of Federal funds in cases where a non-selective cut in State funds has occurred.

The Committee intends that where the air pollution program has been identified for a selective cut, that the cutoff of Federal funds would still occur. But in cases where State agencies in numerous categories have received reductions because of economy measures taken by State governments, no loss of funds should occur. The same concept applies to local agencies who receive partial support from States as well as Federal monies and where such monies are frequently transferred through States.

In addition, the bill contains a new requirement that Federal program grants within any State shall not be less than one-half of one percent of the annual appropriations for grants; subject to the requirements on maintenance of effort.

#### AREA IDENTIFICATION (SEC. 2)

##### SUMMARY

This section amends section 107 of existing law. Each State must submit to the Administrator within 120 days after enactment, a list identifying air quality levels of its air quality control regions or portions thereof. The Administrator shall promulgate such list within sixty days with any necessary modifications, and after notifying and receiving any comment from the State.

## DISCUSSION

The Air Quality Act of 1967 required that air quality control regions be established throughout the country. While that process proved a lengthy one, the Nation was subdivided into such regions early in this decade.

This bill requires that within 120 days after enactment, the States submit to the Environmental Protection Agency a breakdown of those air quality control regions on the basis of ambient levels of various pollutants. The bill lists five specific categories:

1. areas in which any primary standard for a mobile-source pollutant is exceeded;
2. areas that do not or will not achieve, in the time required, any primary ambient air quality standard for a nonmobile-source pollutant;
3. areas in which any secondary ambient air quality standard is exceeded;
4. areas which cannot be classified under categories 2 or 3 for air quality levels of sulfur oxides or particulate matter based on current monitoring information;
5. areas which have ambient air quality levels better than any primary or secondary ambient air quality standard for any pollutant other than sulfur oxides or particulate matter, or for which sufficient data is not available to classify it in the first category.

This information is the basis for the development of programs to prevent significant deterioration in air quality and to improve transportation control planning.

There is sufficient information to implement this provision. Those regions with the most serious transportation-related pollution problems have already been identified. The States by and large know where air quality is cleaner than the standards for sulfur oxides or particulates. In the absence of information to the contrary, a region would be assumed "clean" and placed automatically in the category which subjects the region to provisions preventing significant deterioration of air quality. This provides a prudent step in the absence of knowledge.

Where adequate information is available, the States may divide regions into various portions which fall into different categories. Generally this subdivision of regions should not be on the basis of jurisdictions smaller than counties. Any subdivision of regions would be subject to the Administrator's review.

A region or subregion may be within more than one category, since it may be in a category for one pollutant and in another category for other pollutants. Thus an area may have pollutant levels in excess of an ambient standard for SO<sub>2</sub>, but not particulates. In such a case, as detailed below, a new major emitting facility would still be subject to the "no significant deterioration" requirements of section 110(g).

## COST OF TECHNOLOGY (SEC. 3)

## SUMMARY

This section amends section 108(b) of existing law. The air quality control techniques documents issued by the Administrator to the

States shall include information on the cost of installation and operation, energy requirements, air quality benefits, and environmental impact of the emission control technology.

#### DISCUSSION

This amplifies an existing provision of the Clean Air Act which requires the Environmental Protection Agency to issue to the States and others information on air pollution control technology.

This amendment, would require EPA to develop information on both the environmental benefits and any negative environmental impact of a given technology. It would also require information on the energy requirements, as well as dollar costs, both capital and operational. Such information is expected to be useful to regulatory agencies in making their decisions.

#### INFORMATION DOCUMENTS (SEC. 4)

##### SUMMARY

This section adds new subsections to section 108 of existing law. The Administrator shall publish within 180 days after enactment informational guidelines on the basic elements of a transportation control planning process.

The Administrator shall also publish within 180 days information on four basic transportation control measures. Within 1 year, he shall publish information on additional measures including but not limited to those enumerated in the statute. Such information documents shall include his assessment of such measures, and shall be made available to the States and to Federal agencies.

#### DISCUSSION

One of the deficiencies in the original transportation control process was the lack of knowledge and understanding of the various control strategies. There was little published information or knowledge about alternatives. For some strategies time constraints hindered information dissemination. The end result was that the public was relatively uninformed and unprepared for the implementation of transportation controls.

The requirements of this section are intended to remedy this situation by requiring the Administrator to publish information on various control strategies. Because some of the measures affect programs of the Department of Transportation, the Administrator is required to prepare the information on transportation strategies in cooperation with the Secretary of Transportation.

The Committee, after reviewing the problems encountered with the attempts to implement transportation control plans, believes that a significant proportion of the problems were associated with the manner in which the plans were prepared. The provisions of this bill, which alters the existing transportation control mechanism, coupled with the procedural guidance documents required by this section, should create a planning process that places heavy reliance on local determination that includes adequate intergovernmental and public participation.

The section also directs the Administrator to publish information on a variety of transportation control measures that describes the effectiveness, the costs, and the environmental, energy, and economic impact of the measures. The Administrator must also publish his assessment of whether each measure is reasonable for application to attain a primary ambient air quality standard.

The Committee intends such information documents to be a basic resource available to State and local governments in determining the measures to be included in plans to achieve and maintain the national ambient air quality standards. The lack of adequate technical information has been one of the chief limitations to successful development of transportation control plans. These documents should indicate the difference in cost and effectiveness of applying each measure as a short-term measure or a long-term control measure. The term economic impact is to be defined broadly and should include the possible impact on central business districts if transportation controls are restrictive of access to the district, or if such controls enhance the economic role of the central business district by avoiding patterns which create adverse environmental impact or excessive energy consumption.

The phenomenon of hydrocarbon and oxidant atmospheric transport is becoming a subject of increasing interest because it implies that the present generation of metropolitan area strategies for oxidant control may have to be supplemented by hydrocarbon emission limitations applied uniformly across multistate regions.

Accordingly, the Committee expects that EPA will evaluate the technical basis of oxidant transport and its policy implications, assist the States in initiatives to deal with the problem, and will utilize, where appropriate, the services and guidance of the National Air Quality Commission established elsewhere in this bill.

The information documents should clearly distinguish between transportation control strategies which are appropriate for control of the hydrocarbon/oxidant problem as opposed to the carbon monoxide/nitrogen dioxide problem. It may be that strategies designed to deal with one problem will exacerbate the other and, where this is a possibility the information document should so indicate.

## IMPLEMENTATION PROVISIONS (SEC. 5)

### SUMMARY

This section amends section 110 of existing law. Within 8 months after enactment, each State shall adopt and submit a revised plan to implement and enforce the no significant deterioration provisions of this Act, including a permit or equivalent program for major emitting facilities in all areas.

An implementation plan may include enforceable supplemental emission reduction strategies for existing non-ferrous smelters.

A plan may include land-use controls to maintain or prevent further deterioration from any primary ambient air quality standard, after the energy, environmental and economic impacts of such controls are considered.

## DISCUSSION

In recognition of the technological problems associated with retrofitting existing nonferrous smelters, such as copper, zinc, silver, gold, and lead smelters, the Committee codified existing administrative and judicial interpretation of the Act which allows the use of supplementary control systems on nonferrous smelters. The word "supplementary" means that continuous control technology must be employed as a precondition to using supplementary systems.

Present practices of EPA are to require sulfuric acid plants for strong stream sulfur oxides gases plus additional constant controls on smelters where such additional constant controls are deemed to be appropriate. For some older smelters, present practice is to require acid plants and an additional research and development program with the objective of developing less costly and therefore more available constant reduction control technology. Such practices require the source to adopt improved technology as it is justified by the research and development program. This practice was upheld by the U.S. Court of Appeals for the Ninth Circuit in *Kennecott Copper Corp. v. Russell Train*.

The use of the term "enforceable" restricts the use of supplementary systems to those cases where both the Administrator and the State are satisfied as to the reliability and enforceability of a particular system and where the State (or the Administrator) has the resources to oversee such strategies without sole reliance on the source operator's good faith.

The Committee also intended that both the industry and EPA continue ongoing research efforts to phase out the use of supplementary control systems. The Committee recognizes that since supplementary control systems rely on production slowdowns to achieve compliance, there are economic incentives to install constant controls that allow full utilization of productive capacity. Supplementary control systems do not represent an acceptable long-term solution and the Committee expects that both the industry and EPA will continue the search for constant emission control systems that can be retrofitted onto existing smelters.

The Committee has also provided specific authority for development and implementation of transportation controls in subsection (h) of section 110. Transportation control measures are to be implemented in accordance with the requirements of this subsection.

In the Clean Air Amendments of 1970, the Congress included specific reference to controls on the uses of land as a strategy supplemental to emission limitations in the achievement of ambient air quality standards. It was recognized then that such land use strategies could become particularly effective in the maintenance of clean air, and prevention of further deterioration of dirty air.

In a number of metropolitan areas with substantial pollution problems, primary air quality standards will not be achieved in the near future. It is essential in such cases that further deterioration in air quality not occur. The Committee, therefore, deemed it appropriate that land use controls could be included as a technique for preventing

further deterioration (at any time) of air quality in areas where that air quality is already worse than primary standards, or to maintain those standards.

EPA has promulgated land use regulations. This bill places that EPA authority in a new perspective, precluding any required land use controls for other than maintenance of primary air quality standards or prevention of further deterioration from such standards. It must be emphasized that this directive goes only to EPA's authority in the absence of State action. The State is free to develop its own land use control strategy for the purposes of this Act, after consideration of the energy, environmental and economic impacts of such controls. And if that strategy will achieve and maintain the standards, that is sufficient. At no point does this language infringe on the right of the State to impose land-use controls, including preconstruction review, that would be more restrictive than those required by the Administrator.

The Administrator, in the absence of State action, may impose a requirement for land use controls only after consideration of the potential energy, environmental, and economic impacts of such controls and only for the maintenance of primary ambient air quality standards or prevention of further deterioration from such standards. EPA must assure, in any promulgation, that its land-use review procedures include a mechanism for such a case-by-case review of the energy, environmental, and economic impacts of the applicable land use control.

In any effective air quality program, it is logical that specific decisions regarding possible construction of a facility, and its impact on air quality, should be reviewed to examine the associated effects once the facility is built, and whether it will cause a deterioration in desired air quality. Progress in the control of pollutants must not be retarded by land use decisions that interfere with achievement of the national primary ambient air quality standards. This language encourages that process.

EPA may only impose land-use controls under this bill when a State implementation plan does not provide authority to maintain the primary standards or prevent deterioration from such standards. The Agency is not authorized to require such controls for the attainment of the primary standards or the attainment or maintenance of the secondary standards.

Land-use controls may take the form of procedures for site-development review. A new development would be expected to be reviewed within the context of its direct and indirect impact on ambient air quality, especially how that development may attract heavy concentrations of automobiles or adjacent and required energy sources. This review would examine both the short range and long range effects.

This provision should lead to the creation of a process, supported by State and local governments, for review of the air quality impact of specific land-use decisions. That is sharply different from requiring a comprehensive land-use plan.

# REQUIREMENT TO PREVENT SIGNIFICANT DETERIORATION (SEC. 6)

## SUMMARY

This section adds a new subsection (g) to section 110 of existing law. Each State which contains an area in which the levels of sulfur oxides or particulates are better than any secondary air quality standards (or primary standard, if that standard is more stringent) for that pollutant must adopt and enforce as part of its implementation plan provisions to prevent significant deterioration of air quality.

Such protection is defined by maximum numerical pollution increments for sulfur dioxide and particulates, which can be added to existing levels of those two pollutants in designated areas. A second test of protection is provided in specified Federal land areas (Class I areas), such as national parks and wilderness areas; these areas are also subjected to a review process based on the effect of pollution on the area's air quality related values.

The Environmental Protection Agency is required to study the establishment of such increments for other pollutants and to recommend within 1 year increments for stationary source emissions of nitrogen oxides and hydrocarbons.

All international parks regardless of size and each national park, wilderness area, and memorial park exceeding 5,000 acres which exists on the date of enactment are designated as Class I areas. Those national parks and wilderness areas established after enactment shall be initially designated Class I but may be redesignated Class II with the concurrence of the State and the Federal Land Manager. All other lands, including other Federal lands, shall be designated Class II areas, but may be redesignated Class I by the State. The concurrence of the Federal Land Manager is required where Federal lands are involved.

Each new source with the potential to emit more than 100 tons of a pollutant per year and identified by category in the statute must apply to the State for a permit to construct in a Class II area. EPA is informed of the application and gives notice of it to Federal Land Managers and supervisors of potentially affected Class I areas.

Any Federal Land Manager or supervisor of an affected Class I area, or the Administrator of EPA, or a Governor of an adjacent State is authorized to notify the State of potential adverse impact on the air quality within the Class I area with a statement identifying potential impacts from the proposed facility. If no such notice is forthcoming, the applicant is required only to meet best available control technology requirements as statutorily defined and show that the Class II increment will not be exceeded.

If there is such notice, the applicant would be required to demonstrate whether the Class I increments would be exceeded in the Class I areas, and—

If the permit applicant meets the Class I increments, but the Federal Land Manager (not the supervisor) demonstrates to the satisfaction of the State that the applicant's emissions would never-

theless have an adverse effect on the air quality-related values of the Federal lands, the State must deny the permit; or

If the permit applicant does not meet the Class I increments but demonstrates, to the satisfaction of the Federal Land Manager (not the supervisor), that there would be no adverse impact on the air quality-related values of the Federal lands, the State may issue the permit.

In the event a dispute occurs over any development or activity in an adjacent State, the Governor of the affected State may request the Administrator to enter into negotiations. If this is not successful, the Administrator shall then resolve the dispute.

In the event that the emissions from any new major emitting facility will cause or contribute to a pollutant increase greater than a Class II increment for such pollutant, the Administrator shall, and a Governor may, seek injunctive relief to prevent the issuance of a permit or construction of that facility.

#### DISCUSSION

A nondegradation policy was articulated first in Federal water pollution law. That was in 1965. The concept was incorporated into the 1967 Air Quality Act, which stated that a basic purpose of the Act was to "protect and enhance the quality of the Nation's air resources". That language was not altered by the 1970 Clean Air Amendments. This bill clarifies and details that policy.

The Senate report in 1970 identified the tools necessary to implement a policy to prevent significant deterioration. The Senate report stated on page 11:

In areas where current air pollution levels are already equal to, or better than, the air quality goals, the Secretary should not approve any implementation plan which does not provide, to the maximum extent practicable, for the continued maintenance of such ambient air quality. Once such national goals are established, deterioration of air quality should not be permitted except under circumstances where there is no available alternative. Given the various alternative means of preventing and controlling air pollution—including the use of the best available control technology—industrial process and operating process—and care in the selection of sites for new sources, land use planning and traffic controls—deterioration need not occur.

The Environmental Protection Agency's predecessor for regulating air pollution, the National Air Pollution Control Administration, defined this policy with guidelines in 1969. In 1971, EPA initially proposed guidelines to prevent significant deterioration for air quality implementation plans, but this requirement was deleted from the promulgated guidelines. A court challenge followed.

On June 2, 1972, the U.S. District Court for the District of Columbia upheld the interpretation given by the 1969 guidelines, which stated that significant deterioration of air quality in any region was contrary to the language of the 1967 Act to "protect and enhance" air quality. That action was upheld by the Circuit Court of Appeals and

affirmed by the Supreme Court on a four-to-four decision, issued without written opinion on June 11, 1973.

EPA initially proposed regulations on July 16, 1973 outlining four alternative plans for the prevention of significant deterioration. Extensive agency public hearings were held and revised regulations were repropoed on August 27, 1974. Additional hearings were held throughout the country, and over 300 written comments were received before the final regulations were promulgated on December 5, 1974. Suits were immediately filed by industry and environmental groups challenging these regulations.

During hearings in 1974 and 1975 the Committee was urged to clarify and resolve this issue through legislation, rather than leaving the matter to the courts. This section provides the statutory substance to the more general language in section 101(b) of the Act, which articulates the concept of the prevention of significant deterioration. The Committee intends in this new subsection 110(g) to completely define the requirements of the Clean Air Act to prevent significant deterioration. This section protects clean air areas from deteriorating while permitting the economic development necessary to achieve a steady improvement in our standard of living. In brief, this provision:

- (1) places primary responsibilities and authority with the States, backed by the Federal Government;

- (2) applies only to new major emitting facilities, not affecting existing facilities;

- (3) requires that large new sources use the best available technology to minimize emissions, determined by each State on a case-by-case basis;

- (4) provides as a margin of safety to protect national ambient air quality standards, assuring prudent consideration of any major emitting facility that may threaten that air quality;

- (5) requires the Federal Government, as a property owner, to protect the values related to air quality on certain Federal lands under the stewardship of various Federal agencies;

- (6) eliminates the so-called "buffer zones" that were hypothesized around various land classifications; and

- (7) affects only those areas where air quality is cleaner than the present primary or secondary standards.

The majority of the land mass of the United States has air quality cleaner than these ambient standards. Under existing law—irrespective of any nondegradation procedures—an industrial plant proposed to be built in such a "clean" area must demonstrate that it will not violate any national standard.

To define what significant deterioration is, with respect to sulfur oxides and particulates, the Committee has incorporated in the bill a set of numbers—the so-called "increments"—that specify the allowable change in ambient air quality.

The national standard to prevent significant deterioration is this single set of increments, which are taken from EPA's regulations covering the agency's so-called Class II areas. These are technical measures of the amount of total additional pollution that may be added to the ambient air by a single facility or series of facilities.

These increments are the same for all nondeterioration areas, thus providing equity for all areas. The increment, of course, is measured from the baseline ambient air quality as defined in these amendments. The increment would thus be in addition to whatever levels of pollution exist from present sources, natural background, and other activities. The only exception occurs when pollution up to the increment would produce ambient air exceeding any primary or secondary standard. If that occurs, the full increment may not be used, and the national ambient standards set the ceiling for additional ambient pollution.

The bill contains increments for only two pollutants: particulate matter and sulfur oxides (calculated as sulfur dioxide). EPA, however, is required to study strategies to prevent significant deterioration for other regulated pollutants, and it is directed to inform the Congress of appropriate increments for hydrocarbons and oxides of nitrogen.

In addition to the protection of air quality, the incremental ceiling should serve as an incentive to technology, as a potential source may wish to push the frontiers of technology in a particular case in order to obtain greater productive capacity within the limits of the increments.

#### AMBIENT AIR QUALITY STANDARDS AND NO SIGNIFICANT DETERIORATION INCREMENTS

[In micrograms per cubic meter]

Pollutant	Primary standard	Secondary standard	Class II increment	Class I increment
Particulate matter:				
Annual geometric (mean) .....	75	60	10	5
24-hour .....	260	150	30	10
Sulfur dioxide:				
Annual arithmetic (mean) .....	80		15	2
24-hour .....	365		100	5
3-hour .....		1,300	700	25

In the long run, the growth potential of these clean-air areas may be quickly filled without a reasonable policy to prevent significant deterioration. The first new source built in an area would often absorb the entire available air resource, leaving no capacity for future expansion or growth.

Under the policy to prevent significant deterioration in this bill, the growth options should be enlarged. This is because the provision requires that any major source be constructed to utilize the best available control technology. This should usually leave room for additional growth.

The decision regarding the actual implementation of best available technology is a key one, and the Committee places this responsibility with the State, to be determined in a case-by-case judgment. It is recognized that the phrase has broad flexibility in how it should and can be interpreted, depending on site.

In making this key decision on the technology to be used, the State is to take into account energy, environmental, and economic impacts and other costs of the application of best available control technology. The weight assigned to such factors is to be determined by the State. Such a flexible approach allows the adoption of improvements in technology to become widespread far more rapidly than would occur with a uniform Federal standard. The only Federal guidelines are the

EPA new source performance and hazardous emissions standards, which represent a floor for the State's decision.

This directive enables the State to consider the size of the plant, the increment of air quality which will be absorbed by any particular major emitting facility, and such other considerations as anticipated and desired economic growth for the area. This allows the States and local communities to judge how much of the defined increment of significant deterioration will be devoted to any major emitting facility. If, under the design which a major facility proposes, the percentage of the increment would effectively prevent growth after the proposed major facility was completed, the State or community could refuse to permit construction, or limit its size. This is strictly a State and local decision; this legislation provides the parameters for that decision.

As part of the required procedure, the State must establish a permit program to regulate construction of new major sources in these clean-air areas. The bill defines major emitting facilities for this purpose as any source that falls into one of 28 industrial categories listed in the bill, if the source would also have the potential to emit more than 100 tons of any pollutant per year. If a source falls in a category listed but would be smaller than the 100 tons per year figure, it is not subject to the procedures in this Act. EPA has the authority to add to the list of industrial categories. The State, of course, may use this review procedure for additional categories of sources.

Similarly, when an analysis of energy, economics, or environmental considerations indicates that the impact of a major facility could alter the character of that community, then the State could, after considering those impacts, reject the application or condition it within the desires of the State or local community. Flexibility and State judgment are the foundations of this policy.

The chief tool to be used in implementing the no significant deterioration requirements is the permit that must be issued by the State for any major emitting facility to be located in any clean-air area, including Federal lands. The permit must include an emission limitation based on best available technology. It must insure that total emissions from the facility are such that the increments will never be exceeded. The application for a permit must include careful analyses of climate and meteorology, the soils, the vegetation, the visibility, and other environmental factors at the proposed site and in the area that might be affected by the emissions.

In studying the permit application, the State must examine the growth associated with any proposed facility in terms of other industries that might be attracted to the area and associated with the facility, and its effect on support services, and the residential, commercial, and transportation needs accompanying the facility.

Inherent in any review-and-permit process is the opportunity for delay. The Committee does not intend that the permit process to prevent significant deterioration should become a vehicle for inaction and delay. To the contrary, the States and Federal agencies must do all that is feasible to move quickly and responsibly on permit applications and those studies necessary to judge the impact of an application. Nothing could be more detrimental to the intent of this section and the integrity of this Act than to have the process encumbered by bureaucratic delay.

Major emitting facilities which commence construction after June 1, 1975, are required to receive a permit under this provision.

The amendments provide a definition of when a major emitting facility can be said to have "commenced construction." This definition was adopted to allow a determination as to whether any particular facility is subject to the review and other requirements of the provisions for the prevention of significant deterioration. The date at which construction is said to have commenced is the time at which the owner or operator has obtained all necessary preconstruction approvals or permits required by Federal, State or local laws and has committed itself to a program of construction. The test of commitment is whether physical on-site construction has begun or whether the owner or operator has entered into contractual obligations which cannot be canceled or modified without substantial loss. The Committee does not expect that this test will necessarily be met by penalty clauses in contracts. Rather, the Committee intends a factual determination as to whether a source has so committed itself, financially and otherwise, to the use of a particular site for a particular facility that relocation is not an option and delay or substantial modification would be severely disruptive.

This definition represents a change from the policy which the Environmental Protection Agency followed during 1975. The definition of "commenced construction" used at that time excluded from coverage under the regulations those sources which had entered into binding obligations before June 1, 1975, whether or not construction had actually begun or whether there would be any substantial loss if the contract was canceled or modified. Some sources, in fact, received assurances from the Environmental Protection Agency that their proposed construction would not be subject to review under the regulations for the prevention of significant deterioration. Relying on those assurances and the previous interpretation of the definition of "commenced construction," some of those sources have actually changed their position and commenced construction since June 1, 1975, committing substantial sums on the assumption they would not be subject to review under the significant deterioration regulation.

The new definition of "commenced construction" contained in these amendments is intended to subject many sources to the requirements of section 110(g) who previously would have been exempt on the basis of a contractual obligation entered into before June 1, 1975. The Committee believes it is appropriate to require review of facilities which have not actually begun construction or so changed their position as to risk substantial loss if the project is canceled or modified. Most contracts for utility boilers and oil storage tanks fit this description; while orders for such boilers and tanks are placed far in advance of actual construction, the fabrication of the boiler or similar equipment does not begin, and the risk of loss incur, until only a few years before the date of operation. Even then the fabrication of a boiler or other equipment does not mean that the site of the plant has been fixed.

Where a source has received formal written statements from the Administrator of the Environmental Protection Agency, or the Administrator's designee, stating that the source in question would not be subject to review because of contractual obligations entered into

before June 1, 1975, and where the source in reliance on such statements has subsequently (and before the enactment of this Act) qualified under the new definition of "commenced construction," that source could be exempt from review.

The Committee intends that in order to qualify for this interpretation the source must have received all appropriate preconstruction approval or clearance from the State for the construction of the facility at a particular site, in accordance with State law. The test of reliance on that approval or clearance is whether the source has committed itself to that particular site for the particular facility in question so that a change in location would result in a substantial loss. To qualify for this interpretation, a source must also have a projected date of operation for the facility (or, in the case of an integrated multi-facility plant, such as a steel mill, a key facility of such plant) early enough that to subject it to review would be severely disruptive. This interpretation, which the States should consider in determining whether individual sources are subject to the requirements of section 110(g) should allow those sources which have committed substantial sums in reliance on the earlier interpretations to complete their planned construction.

Much attention has been devoted inside and outside the Committee to land classification. The Committee rejected a national policy that some clean-air areas should be set aside for industrial development where deterioration to the national ambient standards would be allowed, as under EPA's Class III areas. The Committee also rejected as national policy a mandate to establish pristine areas where no change in air quality would be allowed. The Committee did establish a second test to provide additional protection for air quality in areas where the Federal Government has a special stewardship to protect the natural values of a national resource. Such areas are the federally owned Class I areas under the bill.

All international parks without regard to size and, all national memorial parks, national parks, and national wilderness areas in excess of 5,000 acres that exist on the date of enactment of this bill, shall be designated as Class I areas. The reference to national parks is only to those lands denominated as "national parks," not to all elements of the national park system.

A thorough review of other valuable resource areas, such as national monuments and national recreation areas, must be made to determine the appropriateness of moving any of these areas from the automatic Class II designation to Class I. A number of types of lands in these categories might well qualify for designation as Class I. The appropriate Federal Land Manager should review these lands expeditiously and recommend to the appropriate State the redesignations which he feels would be justified. States are also encouraged to conduct a similar review.

The State may go farther, at its discretion. It may designate other areas as Class I and is authorized, but not required, to apply procedures like those set forth in this section to assure protection of the air quality values of those lands within that State. If the areas are Federal lands, the State decision requires concurrence by the Federal Land Manager. The term "Federal lands," as used in this bill, holds its traditional context, and implies no new departure from definitions or systems of classifying Federal lands and land-related rights.

Much confusion has occurred regarding the "buffer zones" that supposedly encircle these Class I areas. The Committee has eliminated any buffer zones by setting the Class I increment as a flexible test. The Class I increment is a test for determining where the burden of proof lies and is an index of changes in air quality. It is not the final determinant for approval or disapproval of the permit application.

Most sources will only have to model for the Class II numbers and provide data to demonstrate that it will not exceed the increment governing the Class II area. The exception occurs when there is reason to believe a source may damage the air quality associated values of a Class I area. The State, on receipt of any application for a permit, is required to publish a notice of the application and to inform the EPA. EPA would then give notice to Federal Land Managers and to the supervisors of any Class I Federal lands in the areas that might be affected.

The Federal Land Manager or the supervisor of a Class I area, or the Administrator of EPA, or a Governor of an adjacent State with a Class I area, is authorized to notify the State that the proposed source poses a potential adverse impact on the quality of the air within the Class I area. A statement identifying the potential impacts of the proposed facility would be filed. The bill charges the Federal Land Manager and the supervisor with a positive role to protect air quality values associated with the land areas under the jurisdiction of the Federal Land Manager. This means that such officials must seriously consider whether a proposed facility might adversely affect the lands for which they are responsible. If either of them believes there is any risk of such adverse effect, that official should notify the State and initiate the Class I analysis. This affirmative responsibility to protect the air quality of Federal lands may involve court challenges for inappropriate permits and facilities constructed without permits, as well as participation in the permit consideration administrative process.

When no such notice is forthcoming from a Federal lands official, the Administrator, or a Governor, the applicant would adhere to the regular requirements for the Class II areas, with best available control technology.

When notice is filed, the applicant must demonstrate whether or not the Class I increments would be exceeded in the Class I areas. If they are met, but the Federal Land Manager, not the supervisor, nevertheless can demonstrate to the satisfaction of the State that the emissions would still have an unacceptable adverse effect on the air quality-related values of the Class I Federal lands, then the State must refuse to issue a permit.

If, on the other hand, the permit applicant demonstrates, to the satisfaction of the Federal Land Manager, that there would be no unacceptable, adverse impact on the air quality related values of the Class I Federal lands, notwithstanding the fact that the Class I increments would be exceeded, the State may issue the permit.

Each case of suspected Class I intrusion must be analyzed on an individual basis, with the decision on whether or not a permit is issued resting with the State. The Federal Land Manager holds a

powerful tool. He is required to protect Federal lands from deterioration of an established value, even when Class I numbers are not exceeded. And whenever they are, he must be satisfied by the applicant that Federal lands will not be damaged, and certify to that effect before the State may issue a permit.

No land use plan is required under the requirements to prevent significant deterioration. States will comply by amending their existing Clean Air Act Implementation Plan. If a State fails to adopt such an amendment, no major emitting facility can be constructed in the areas of the State identified as cleaner than any existing standards. The Federal Government's role under the provision to prevent significant deterioration is far less extensive than under provisions required to achieve the primary and secondary standards under the Clean Air Act.

The Committee intends a sharply restricted role for the Environmental Protection Agency in regard to implementing the policy to prevent significant deterioration. EPA is limited to (1) approving the new source review process established by the State; (2) seeking injunctive relief or other measures that would be necessary to prevent the issuing of a permit for a new source if it does not comply with the requirements of the subsection; (3) resolving interstate disputes; and (4) notifying a State when it believes adverse impact may occur in a Class I area. Once the State submits an adequate amendment to its plan, the Environmental Protection Agency role is restricted to assuring compliance with the law.

While the general scope of the Federal Government's activities in preventing significant deterioration has been carefully limited, the Federal Land Manager should assume an aggressive role in protecting the air quality values of land areas under his jurisdiction. This will trigger analyses of air quality impact of proposed development where there is reason to believe an adverse impact might occur. The Federal Land Manager is expected to request such analysis under the notification steps provided in the bill when there is reason for concern. In the case of doubt, the land manager should err on the side of protecting the air quality-related values for future generations.

As used in paragraph (5) (B) and (C), the term "air quality related values" of Federal lands designated as Class I includes the fundamental purposes for which such lands have been established and preserved by the Congress and the responsible Federal agency. For example, under the 1916 Organic Act to establish the National Park Service (16 U.S.C. § 1), the purpose of such national park lands "is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

Much of the controversy concerning this bill has grown from studies of the effects of the policy to prevent significant deterioration. The Environmental Protection Agency and the Federal Energy Administration jointly analyzed alternative approaches to preventing significant deterioration in a two-volume study in October 1975, "An Analysis of the Impact on the Electric Utility Industry of Alternative Approaches to Significant Deterioration." Four supplements to that study have since been published.

## EXTENSIONS FOR TRANSPORTATION CONTROL PLANS (SEC. 7)

## SUMMARY

This section amends section 110 of existing law by adding a new subsection (h). Upon application of a Governor on or after June 1, 1976, the Administrator may grant an extension of up to 5 years for the attainment of primary ambient air quality standards in an area requiring transportation controls where their implementation without an extension would have serious adverse social and economic effects.

The Administrator may grant such an extension only if the State (1) has implemented or will have implemented by June 1, 1977, its plan requirements applicable to stationary sources of mobile source-related pollutants; (2) will have begun to implement by June 1, 1977, all reasonably available transportation control measures in its plan; and (3) will have completed by June 1, 1978, a detailed planning study of alternative control measures.

Any State which receives an extension must submit to the Administrator by June 1, 1978, a revised plan prepared where possible by an organization of local elected officials designated by the State. The plan must provide for the attainment of the primary ambient air quality standards as expeditiously as practicable but no later than May 31, 1982, unless such attainment is not possible through the implementation of all reasonable and available control measures.

In such a case, the Governor may apply on or after June 1, 1981, for a further extension, which shall run no later than May 31, 1987.

When the Administrator denies an extension because a State has not met the minimum requirements specified in this section or when a Governor has not applied for an extension, the Administrator shall promulgate an implementation plan after consultation with State and local elected officials. A State may apply to the appropriate U.S. Court of Appeals for a stay of any provision of such plan pending review.

Grants shall be available for 2 years to any local transportation or air quality planning organization, for 100 percent of the additional costs of developing a transportation control plan.

The Administrator shall not approve any projects or award any grants under any authority after June 1, 1977, to a State which requires an extension and has not applied for one.

In the event that a State does not implement a requirement of an approved plan, the Administrator shall cumulatively decrease by 15 percent annually the funds for any project authorized by him.

No agency of the Federal Government shall support in any way an activity not in conformance with a plan requirement. All Federal programs with air quality-related transportation effects shall give priority to the implementation of transportation control measures.

## DISCUSSION

Existing law requires that State plans impose emission limitations and other measures to achieve that level of air quality necessary to protect public health and public welfare. One of the measures listed in the 1970 Act was "transportation controls."

The Administrator initially allowed States to put aside development of transportation control plans. That action was overruled by the

U.S. Court of Appeals for the District of Columbia on January 31, 1973. States adversely affected by mobile source related pollutants were required to develop and submit transportation control plans which provided for the achievement of primary ambient air quality standards no later than 1977, the final date in the statute.

In addition, the limited time available for submission of plans, the controversial nature of many of the measures contained in the plans, and the magnitude of the pollution problem in many metropolitan areas made this task extremely difficult.

This bill also amends the emission control requirements applicable to new automobiles. The adjustments have the effect of relaxing the provisions of the 1970 Amendments in both the level of the standard for nitrogen oxides and the model years in which emission standards are to be achieved. These amendments, coupled with evidence on deterioration in performance of some auto emission control systems, would place even greater burdens on transportation controls unless reasonable modifications are made in the timetable.

This section amends the existing transportation control mechanism in several basic respects: (1) it incorporates much of the Administration's proposal in S. 594 for two possible 5-year extensions in the time for achievement of the standards; (2) it prevents EPA from requiring any measures that would have a serious and adverse economic or social impact; (3) it creates incentives for effective local planning by elected officials; and (4) it gives EPA authority to withhold grant funds should a local government fail to develop or enforce a reasonable program.

To date, 31 metropolitan areas have been identified by EPA as needing reduction of mobile source related pollutants beyond what is available through controls on new cars and stationary sources. Agency officials have said that other communities will need transportation controls as more complete monitoring data becomes available.

The identification of areas which will require revised State implementation plans in order to achieve ambient air quality standards is a process currently being carried out by the Agency. While a separate identification process is not contemplated in the bill, the Committee's intent is to insure that the present process is thorough and expeditious.

Under the Committee's proposal, any State that contains such an identified area may seek an extension in the compliance date until mid-1982. The Agency will grant the extension if the State shows that it has implemented, or will begin implementing by mid-1977, those transportation control measures that are reasonable and have no serious adverse social or economic impact. An additional extension to mid-1987 is authorized by the bill for areas with particularly acute problems. The Committee intends that this second extension period will only be granted to metropolitan areas experiencing severe auto-related air pollution problems.

To date, a major problem has been a deficiency in local involvement in transportation control planning. To correct this, the bill requires that locally elected officials participate in the development of transportation control plans to obtain the post-1977 extensions. This recognizes that transportation control planning is a local political process affecting the daily lives and transportation patterns of local voters.

To augment the ability of local officials to undertake this work, the bill provides 2 years of 100 percent Federal grants for planning transportation controls. Seventy-five million dollars is authorized to pay the full cost of any additional efforts in transportation planning as a result of this requirement. This money is not to substitute for existing State or local funds, or funds that local agencies receive from Federal highway, housing, water pollution, and other programs. EPA will be expected to carefully review planning programs to avoid duplication of efforts. These funds are available only to the local agencies of elected officials designated by the State, except in those limited cases where the State will have the authority to implement this provision.

The key determination under this section is the consideration, review, and approval of transportation control measures that are reasonably available. Gasoline rationing is not a reasonable procedure, and cannot be expected to become a reasonable strategy.

Elsewhere in the bill, the EPA is required to prepare and issue a document analyzing various alternatives and strategies. Inclusion in the list is not a determination that a strategy is reasonable, although it is assumed that most of the list would so qualify.

Specifically this list includes:

1. motor vehicle emission inspection and maintenance programs,
2. programs to control vapor loss from fuel transfer and storage operations,
3. programs for improved public transit and new transportation policies and facilities,
4. programs to establish exclusive bus and car-pool lanes, to establish areawide carpool programs, to limit portions of road surfaces or certain sections of a metropolitan area to the use of common carriers, and to the use of nonmotorized vehicles or pedestrian use,
5. programs to control on-street parking and new offstreet parking facilities and to construct new parking facilities and operate existing parking facilities for the purpose of fringe parking,
6. employer programs to encourage carpooling, vanpooling, mass transit, bicycling, and walking,
7. programs for secure bicycle storage facilities and bicycle lanes,
8. programs of staggered hours of work,
9. programs to utilize road user charges, tolls, or differential rates to discourage single-occupant commuting,
10. programs to control extended idling of vehicles and reduce emissions caused by extreme cold-start conditions,
11. programs to reduce emissions by improving traffic flow,
12. programs to convert fleet vehicles to cleaner engines or fuels, and
13. programs to retrofit emission devices or controls on vehicles and engines other than cars.

In making a determination of whether a particular measure will have serious adverse social or economic effects, the Administrator must take into consideration the implementation time required. A measure may be reasonable, but not reasonably available for an area

by mid-1977 or mid-1979. It is probable that emission inspection and maintenance programs for automobiles will be considered reasonable. But such programs might impose adverse social or economic effects on a particular community if implemented fully in 1977; if there would be insufficient lead time to train mechanics, educate the public, and build the facilities. However, such measures may become reasonable, under the terms of this bill, if planned for implementation two or three years later.

In many cases, an inspection and maintenance program for motor vehicles will be reasonable. The Senate report on the 1970 Act specified that "each region develop motor vehicle inspection and testing programs. . . . The Committee believes that this is an extremely important provision. . . ." Section 110 and title II of existing law encouraged inspection and maintenance programs.

The adoption of effective inspection and maintenance programs will be hastened by the development of an effective, inexpensive, in-use test for emissions. Several years ago, the Administrator indicated that such an in-use test could be developed in a very short time. This has not occurred. The Agency should move toward development of such a test, which need not be one that correlates with the lengthy laboratory and certification tests of EPA. The average per-vehicle cost for such inspection tests have been estimated to range from 30 cents to \$5 per car, depending on the scope of testing. The average cost for repairs when a car fails the test is reported to range from \$23 to \$34. These costs are reasonable, particularly when the repairs usually mean a better tuned, better operating, more fuel-efficient car for the owner.

Whether a measure is reasonable also depends on such factors as the level of control to be attained in comparison with the cost in economic or convenience terms. The Committee bill would require the Administrator to evaluate the reasonableness of various control strategies, taking this factor into account. While many of the listed measures are already being implemented in some communities and, hence, they are reasonable by demonstration, the information documents to be required can be expected to assist all areas to making the most informed choices.

But it must be emphasized again that this bill does not attempt to define for State and local governments those measures that may be reasonable. That is a responsibility resting with State and local officials, in cooperation with EPA, because maximum flexibility must be preserved. Circumstances may identify one measure as very effective in California, but useless on the East Coast. And it must be recognized that any measure, pushed to the extreme, is unreasonable, and almost any measure, when implemented with moderation, can be judged reasonable.

Retrofitting existing cars, using presently developed retrofit devices, is not a reasonable transportation control measure. If, in the future, some new and relatively inexpensive device is developed, the Administrator and the States, could, after appropriate study, determine that such a device might be deemed reasonable and be used in a retrofit program.

The Administrator's authority pertaining to measures contained in plans submitted by Governors is restricted to overruling the State in cases where the submitted plan does not contain measures which have

been deemed to be reasonable and should have been contained in the plan. The Administrator is not authorized to reject the application on the grounds that it contains some measures which the Administrator feels are not reasonable. In such cases, the State may have made a determination that it is willing to exert an additional effort in order to implement more extensive control strategies, a right which is within the authority of the State (under this section and preserved under section 116).

Challenges made against the Administrator's determination of the adequacy of State plans and his definition of reasonable measures shall be available after the Administrator has made his determination and shall be reviewed by the courts under section 307.

To enhance the capabilities of the State to assure the EPA proposals are consistent with local needs, the Committee has included language which authorizes the U.S. Court of Appeals to stay any provision promulgated by the Administrator upon application by a State.

The purpose of the provision making available a stay of the Administrator's promulgation when the State seeks review of the reasonableness of the requirement, is not to cut off review or relief sought by other parties. Rather, the Committee intends that any dispute be in the first instance between the State (as principally responsible for the reasonableness of proposed transportation control plans) and the Administrator.

The Administrator and State and local officials should determine as early as possible those measures deemed reasonable for inclusion in a plan so that the applicant will have some assurance that its plan will be approved by the Administrator. Lack of such a coordinated effort has proved to be a major flaw in implementing transportation control provisions to date. The State and local governments must then take action to provide authority to implement the plan submitted.

In the event a State fails to apply for an extension when the air quality standards will not be met by mid-1977 for automotive-related pollutants, EPA must not award any grant funds or approve any projects in the affected area. If a plan is submitted and approved but is not being implemented, EPA must reduce grant funds by 15 percent the first year the requirements are not being implemented or are not replaced with an equivalent alternative. If the requirements are still not being met in the second year, the funds are reduced by 30 percent; the third year, the reduction is 45 percent.

Federal agencies must make their activities consistent with the provisions of a transportation control plan.

Finally, it is the intent of the Committee that the transportation control plan does not supersede the requirements of section 110 of the Act relating to control of stationary sources of mobile source-related emissions. Communities are free to gain credit in their transportation plan for such control, and through the use of the preemption provision for cars sold in model year 1979.

This bill has drawn upon section 208 of the 1972 Amendments to the Federal Water Pollution Control Act. States are expected to utilize agencies comprised of locally elected officials with responsibility for general government with authority to prepare and implement transportation controls.

Although the Committee has not required that the activities of area-wide waste treatment planning agencies designated pursuant to section 208 be coordinated with the Clean Air Act transportation control planning process, this would be a reasonable approach in many areas. It is the Committee's view that to the extent the section 208 programs under the Federal Water Pollution Control Act are utilized, the Clean Air Act activities can be later interwoven. EPA should encourage such integration.

The terms "mobile source-related pollutants" and "transportation related pollutants" in this section apply to nitrogen oxides, hydrocarbons, carbon monoxide, and oxidants, although the Administrator is not precluded from expanding this definition where that seems reasonable if mobile sources may cause or contribute to significant levels of other pollutants.

## HAZARDOUS EMISSION DESIGN STANDARDS (SEC. 8)

### SUMMARY

This provision amends section 112 of existing law by adding a new subsection (e). The Administrator is allowed to specify design, equipment, or operational standards for the control of a source of hazardous emissions, where an emission limitation is not possible or feasible.

### DISCUSSION

Section 112 of the existing law has been interpreted by some courts as only allowing the use of numerical emission standards. While the Committee has a strong preference for numerical emission limitations, it recognizes that in a very few limited cases, other approaches may be necessary.

Asbestos is an example which has been demonstrated as requiring other than a direct numerical emission limitation. The problem occurs when activity such as demolition of existing buildings causes asbestos fibers to escape into the ambient atmosphere. Work practice and other design characteristics may be the only means available for controlling such pollutants. While the ability to measure and capture the pollutant is the key criteria, the Agency should also consider the extent to which capture of all emissions might have an adverse health consequence for workers.

This provision is intended to be available only where it is not possible or feasible to measure hazardous emissions or capture them through appropriate devices for control.

This limited provision would fully authorize the present EPA regulations governing asbestos. The present regulations include a prohibition on the use of certain materials such as spray-on asbestos fire proofing materials. Such regulations would be appropriate within the meaning of this provision.

Design standards are not to be used where no margin of safety exists for a pollutant. This provision should not be used for such pollutants as a means of avoiding numerical emission standards where such standards can be applied.

## DELAYED COMPLIANCE ORDERS (SEC. 9(a))

### SUMMARY

Section 113 is amended to authorize a State, and after 30 days notice, EPA, to issue enforcement orders to sources not in compliance with applicable emission limitations. Such orders shall require compliance as expeditiously as practicable, but in no event later than January 1, 1979.

If a non-complying source intends to comply with an applicable emission limitation by closing or replacing a facility, or changing its production process, the State or the Administrator may issue an order permitting such source to operate until January 1, 1979 upon the posting of a bond or other surety. If the source fails to close or replace the specified facility, or fails to change its production process, the bond shall be forfeited.

If a source intends to comply with an applicable emission limitation with an innovative control technique which will reduce emissions more than the applicable standard, or which has potential industry-wide application at significantly lower costs than demonstrated control technology, such facility must be in compliance by January 1, 1981.

Any enforcement order in effect on the date of enactment of these amendments shall remain in effect to the extent that it is consistent with section 113(d) but shall adhere to the compliance date of January 1, 1979.

### DISCUSSION

A substantial number of major emitting facilities remain out of compliance with emission limitations. Some States have not even adopted full State implementation plans. While substantial progress has been made in bringing many sources into final compliance, an improved mechanism must be established to handle sources presently not in compliance.

It is estimated that of approximately 22,000 major emitting facilities, roughly 3,500 are either out of compliance with emission limitations or are not adhering to the approved compliance schedule. Further, a substantial number of sources which do not meet the definition of "major emitting facility," but which may nonetheless be significant in their air quality impact in certain air quality control regions, are also out of compliance.

Under existing law, a source that can show a compelling reason for a delay in meeting State implementation plan requirements may seek an extension in the final compliance date. Section 110(f) allows the Governor to request a one-year extension, which the Administrator may grant if he determines that good faith efforts have been made, that the necessary technology has not existed for sufficient time, that interim steps have been taken, and that continued operation is necessary.

Rather than use this provision, which the Agency has burdened with procedural and substantive requirements so that it is unworkable, the Environmental Protection Agency has adopted the practice of issuing enforcement orders under section 113(a) that extend far beyond the deadlines in the law or any dates applicable under section 110(f).

This procedure has no basis in law. The only authority for extended deadlines is section 110(f).

States normally cannot make these orders part of the State implementation plan because the orders, allowing the source until some time after the necessary attainment date, are technically inconsistent with attainment and maintenance deadlines specified in the Act. This leaves the source subject to citizen suits and to potential inconsistent enforcement action taken by the Administrator.

This section of the bill seeks to remedy that practice, prohibiting delay in compliance or the issuance of any enforcement order except under terms specified in this section. All enforcement orders under this section must contain final dates for compliance that are as expeditious as practicable. This shall govern all enforcement orders issued by either State or Federal authority. And, in no event, shall any enforcement orders be issued which contain a final compliance date later than January 1, 1979. Special provision is made for cases when operation will be terminated, facilities replaced, production processes changed, innovative technology used, or for sources issued Federal Energy Administration prohibition orders and sources converting to coal due to natural gas curtailment.

A delayed compliance order should be issued under this section only when it is necessary. The State shall be the first agency to make such a determination, with review power resting with EPA. Sources shall not be eligible if the delay is sought simply for convenience or for economic advantages which would accrue from delayed compliance. The standard continues to be one of compliance as expeditiously as practicable.

In an effort to create equity and guarantee a reasonable national effort, the Committee also has included a provision that sources not in compliance by 1979 shall be subject to a penalty, removing any competitive advantage gained by non-compliance.

The basic requirements which the State or the Administrator would have to meet in the issuance of a delayed compliance order are outlined in a new subsection (d) which would be added to section 113. In addition to compliance as expeditiously as practicable, it requires increments of progress towards final compliance. An order may be issued only after notice to the public and an opportunity for a public hearing.

The State is to be the first level of authority in issuing such orders. EPA may object in writing within 90 days to the issuance of such orders. If the Administrator does so, he must immediately issue his own enforcement order to the source. Nothing in this section is to alter section 116 of existing law which preserves the right of the States to apply more stringent standards and deadlines than required under Federal law. The authority of the Administrator to call for a plan revision under section 110(a)(2)(H) or to promulgate a revised plan where necessary is not limited by this subsection.

The Committee specifically rejected the notion of requiring States or the Administrator to go through a lengthy procedure of establishing good faith or bad faith of the past performance of a source. Making such a distinction was part of the difficulty encountered by the Administrator in implementing section 110(f) of existing law. The imposition of a delayed compliance penalty applicable to all eligible

sources after January 1, 1979, serves as a more effective and fair means of achieving compliance. Undertaking tests and studies of "good faith" would place an excessive burden on the manpower and resources of the States and EPA.

The bill contains two exceptions to the general procedure outlined above. When a source intends to achieve compliance by replacing the facility, or by a complete change in the production process, or by terminating operation, the source may apply for an extension that in effect requires no interim steps before full compliance is required in 1979. But when an applicant makes this decision and request, the applicant must agree to post a bond or other surety to insure that compliance is achieved and that the polluting facility allowed this period of grace is actually replaced or is converted. The bond or other surety will be equal to the cost of compliance had the owner decided to comply by installing control equipment. The term "other surety" may include an appropriate letter of credit or similar financial instrument, so long as that paper can be converted immediately to its full value in case of forfeiture.

As used here, "change in production process" contemplates only a fundamentally different method of production rather than a modification to a process which essentially remains the same. If such a fundamental change may involve different changes in different parts of the process or in identifiable segments, the bond or surety shall be reduced as those various parts of that process are converted to the new production process.

The other alternative involves a request by a source that it be allowed to comply through the use of an innovative production process or a control technique that has the potential for emission reduction significantly greater than those required by the applicable emission limitation, or at a cost for control that is significantly less and would also offer the potential for industry-wide application. In these cases, the source is given until January 1, 1981, to achieve compliance.

This provision is intended to serve as an incentive to industry to adopt innovations that will have wide application. The States and the Administrator are expected to extend this two-year grace period only in cases that offer this broad potential for national benefits.

Any such allowable delay in compliance relating to the use of innovative technologies has the effect of delaying until 1981 the dates when the bonding requirement or the delayed compliance penalty will be imposed. It does not remove the applicable requirement.

If the recipient of the technological waiver plans to replace its production capacity with an entirely new process or facility, the Administrator is expected to require that the applicant post a bond or other surety to assure that the existing equipment or capacity will be taken out of service by January 1, 1981, as promised. If the waiver is based on use of a new technique on existing equipment or process, the State and the Administrator are expected to set a 1981 delayed compliance penalty for that source, just as they will for any normal source that must meet the 1979 deadlines. The penalty will be based on capital costs, interest cost, operating costs, and the economic value gained by delay, and it will be determined like any similar penalty on a facility that did not receive a technology extension.

This section also provides a mechanism for dealing with sources issued prohibition orders by the Federal Energy Administration under the Energy Supply and Environmental Coordination Act of 1974 and sources converting to coal as a primary energy source because of actual or anticipated curtailment of natural gas supplies under any curtailment plan approved by the Federal Power Commission or appropriate State regulatory authorities. The facility issued the prohibition order or intending to convert could be issued an enforcement order by the State or the Administrator which could extend for up to three years from the date FEA issues the final prohibition order or a facility gives notice of intent to convert. In issuing any such order, the State or the Administrator would still have to include interim control requirements (comparable to the primary standard requirements of section 119, which is repealed) which insure that the source will not cause or contribute to violations of the national primary ambient air quality standards.

This subsection would also transfer to the Federal Energy Administration the authority presently vested in the Environmental Protection Agency to establish any necessary priorities for the distribution of continuous emission reduction systems. It should be noted that this authority is to be exercised only where it is essential to carrying out the purposes of the program relating to coal conversion. If a priority system is being considered with respect to continuous emission reduction systems, the Administrator of the Federal Energy Administration must first consult with both the States and the Administrator to determine the need for such a system and the method of its implementation.

In accordance with paragraph (10) of this subsection, any order or consent decree issued on or before the date of enactment of these amendments would remain effective to the extent that the order or consent decree is consistent with the requirements applicable to orders under this subsection and section 120 (dealing with the delayed compliance penalty). No order or consent decree issued on or before the date of enactment of these amendments would be considered invalid if it meets all the requirements of this subsection except the requirement for notice to the public and an opportunity for a public hearing prior to its issuance.

Paragraph (8) of section 113(d) is intended to make explicit that the only avenues other than section 113(d) enforcement orders open to a noncomplying source to gain an extension of its final compliance date are through the procedures available under section 110(f) or if a State exercises its prerogatives under section 110 to set a new date for attainment of the secondary standards. The subject matter of paragraph (8) is strictly limited to the temporal aspects of the State implementation plan process. Nothing in paragraph (8) is intended to affect the ability of States to revise the substantive aspects, such as emission limitations, of their State implementation plans under section 110. To the extent that a noncomplying source is affected by a substantive revision, then the appropriate elements of the delayed compliance order under section 113(d) for the source would also be changed accordingly, subject, of course, to the time limitations of subsection (j) of section 120. Those time limitations are intended to reduce the opportunity to use substantive revisions, even to more stringent emission limitations, as a means for extending compliance dates.

## DELAYED COMPLIANCE PENALTY (SEC. 9(b))

### SUMMARY

This provision adds a new section 120 to the existing law. Any source which receives an enforcement order but does not comply with its regulation by January 1, 1979, shall be automatically subject to a delayed compliance penalty in the form of monthly payments equal to the cost of compliance, including capital costs, debt service costs, operation and maintenance costs, and the additional economic value gained by delay.

Any source which receives an enforcement order with a compliance date later than January 1, 1978, shall furnish to the State prior to January 1, 1977, detailed information on its proposed method of compliance, including all costs. After publication by the State of a proposed delayed compliance penalty and an opportunity for a public hearing, the State shall amend such source's enforcement order to include such penalty, to accrue after January 1, 1979.

If the Administrator objects to such penalty established by the State, he shall give written notice of his objection within 90 days after the proposal, and shall substitute his own penalty.

A source which fails to make a penalty payment shall be subject to a penalty of not more than \$25,000 per day of violation, as provided in section 113(e). Judicial review of a penalty is available to a source in district court, but such review shall in no case delay the imposition of a delayed compliance penalty unless bond is posted. Financial relief shall be provided to a source which successfully challenges its established penalty after partial payment.

### DISCUSSION

This section establishes a penalty to be imposed after January 1, 1979, in an effort to assure effective and fair implementation of the requirement that compliance with emission limitations be achieved. This timetable should give all major industrial sources sufficient time to achieve compliance, while providing a balanced, economic disincentive to delay. As noted earlier in this report, a significant number of major sources of pollution do not meet clean-air requirements.

Information from the Environmental Protection Agency indicates that as many as one-third of the major coal-fired power plants are in violation of emission limits or requirements of compliance schedules; many refinery complexes are not in full compliance. Noncompliance is high in other industrial categories as well.

Without some new, effective, and fair tool for enforcement, many sources continue to find the fees paid to attorneys to resist the requirements of law less expensive than pollution control equipment.

The provision will negate the economic advantage of non-compliance without telling the source how it must comply. Sources out of compliance are in a position to set prices at levels below those that would be profitable for their competitors who have made compliance. Thus non-complying sources could obtain higher rates of

return than competitors who are in compliance with clean air requirements, resulting in more attractive rates of return on investment. Electric utility companies, which operate under regulated monopoly conditions, could benefit, since inter-regional competition could attract customers shopping for cheap electric power.

To balance the economic difference between those who comply and those who resist or delay, this bill imposes a penalty on any source out of compliance by January 1, 1979. The penalty is intended to be set at a level equal to the full cost of compliance—the value saved by non-compliance—calculated over a period of 10 years, and paid monthly. This penalty is additional to all existing enforcement actions, penalties, or other measures taken to bring a source into compliance.

In computing the monthly payment, all measures of economic value that may accrue to the source through lack of complete compliance must be included. That involves the direct costs of equipment, operation, any energy needed to run the control system, and land or site costs, the interest on such debts, and any discernable economic value the source may have obtained in competition with those in compliance.

There are two narrow exceptions to this penalty. If the source fails to comply for reasons totally outside the control of the owner or operator of the source (including any parent or subsidiary corporations) then the penalty is waived for the period that non-compliance was outside the source's control. This must be a limited and carefully defined waiver; cost of control cannot be a defense.

The other exception occurs if a source is given a waiver until 1981 to install innovative technology. For this exception the penalty would begin 2 years later, on January 1, 1981.

States should initiate action on delayed compliance penalties. Sources are required, by January 1, 1977, to provide the information to the States and the Environmental Protection Agency from which a penalty can be fairly computed. The specific monthly charge will be established by January 1, 1978, giving a full year to settle disputes. For a source with a technology waiver, these two dates could be delayed. After public notice and the opportunity for a public hearing, the State must set the penalty rate. The Administrator will publish guidelines that the States can use to make this determination.

If a State sets a penalty for a source at less than the estimated cost of compliance under these guidelines, or fails to act or take authority to act, without satisfactory explanation, the Administrator can substitute an appropriate or higher penalty. The owner or operator of the source may seek court review of the penalty, but such review does not delay the obligation of the source to commence monthly payments. The purpose of this penalty is to circumvent delays. It is, therefore, imperative that the penalty setting procedure not be retarded.

In some cases, the penalty may be greater than the cost incurred, once compliance is achieved. If the source can demonstrate after compliance that the costs of compliance, excluding the economic value of non-compliance, were overestimated in computing the penalty, the difference should be refunded, with interest.

## PENALTIES (SEC. 10)

## SUMMARY

This section amends section 113 of existing law. Section 113, the Federal enforcement provision of the Clean Air Act, is amended to provide for a civil penalty of not more than \$10,000 per day of violation, in addition to injunctive relief, for violations of enforcement orders or various requirements of the Act. In addition, the criminal penalty provision of section 113 is revised to include violations of section 113(d) enforcement orders involving compliance date extensions, and to add to the definition of "person" for the purpose of criminal sanctions, any responsible corporate officer.

The section is also amended to provide a fine of not more than \$25,000 per day for knowing violations of implementation plan requirements where there has been no request for a section 113(d) enforcement order extending the compliance date, filed within 180 days after enactment, and for violations of the provisions of section 120 which require submission of information by January 1, 1977, on the cost of compliance and which require the payment of the delayed compliance penalty.

Another provision authorizes the Administrator, at the request of a Governor who alleges that a major emitting facility in another State will interfere with the achievement or maintenance in the Governor's own State of any primary or secondary ambient air quality standard, to take such measures, including seeking injunctive relief, as necessary to prevent such interference.

## DISCUSSION

Under existing law, civil penalties are limited to a few provisions of title II (dealing with mobile sources). For the remainder of the enforcement of the Clean Air Act, criminal penalties are the only penalties available.

The Committee believes an appropriately fashioned civil penalty provision can add enforcement flexibility to achieve compliance with the requirements established under the Act. The reported bill contains a provision for the Administrator to seek court-imposed civil penalties of not more than \$10,000 per day of violation. The penalties are to be imposed by the court. They are not to be levied directly by the Agency.

The actions are to be brought in the district court of the United States for the district in which the defendant is located or resides or is doing business.

Under another provision, for the purposes of liability for criminal penalties the term "person" is defined to include any responsible corporate officer. This is based on a similar definition in the enforcement section of the Federal Water Pollution Control Act. The Committee intends that criminal penalties be sought against those corporate officers under whose responsibility a violation has taken place, and not just those employees directly involved in the operation of the violating source.

In the case of knowing violations, in addition to the criminal penalties already in the law, penalties of not more than \$25,000 per day of

violation are authorized to be imposed by the courts. A person could be so fined in three possible cases: (1) where the source is in knowing violation and has made no request for a compliance date extension; (2) where the source has not submitted by January 1, 1977, information necessary to establish the amount to be used in a delayed compliance penalty if such a penalty becomes applicable; and (3) when a source has not made payment when a delayed compliance penalty has become applicable.

A person who failed to take action to obtain a delayed compliance date enforcement order under these amendments, but who knowingly remained out of compliance with an implementation plan requirement, would be subject to a fine of not more than \$25,000 per day. The request for such an order would have to be made within 180 days from the date of enactment of these amendments.

This section would add to title I of the Act's enforcement provision the authority to seek civil penalties for violations of implementation plan requirements, new source performance standards, hazardous emission standards, enforcement orders, and requirements under section 114.

An interstate enforcement responsibility would be imposed upon the Administrator to take court action to stop a source from interfering with attainment or maintenance of national standards in a State other than the State where the source is located.

In establishing various enforcement authorities for title I of the Act in 1970, the Committee carefully considered what mix of civil and criminal remedies was important and decided in favor of civil injunctive relief as well as criminal monetary penalties and imprisonment. Despite the recalcitrance of some source owners and operators toward expeditiously complying with requirements under the Act, few criminal actions have been brought and great difficulties and delays have been encountered in those cases. The Committee recognizes the success which the Administrator has had under title II of the Act in obtaining substantial civil monetary penalties in enforcement actions and believes that it is necessary to add civil penalty authority in section 113. The limit for such penalties would be \$10,000 per day of violation.

This action does not represent a judgment by the Committee that criminal actions are to be ignored by the Administrator in appropriate cases, but rather reflects a belief that civil monetary penalties should be available to complement injunctive relief and possible criminal cases.

## EXPANSION IN NATIONAL AMBIENT AIR QUALITY STANDARD AREAS (SEC. 11)

### SUMMARY

This section adds a new subsection (g) to section 113 of existing law. The purpose of the new subsection is to establish an exception for facilities proposed for construction or modification at an existing site or plant owned or controlled by the owner or operator of the proposed facility in which any ambient air quality standard is exceeded if the proposed facility will emit air pollutants so as to prevent the attain-

ment or maintenance of such standard. This exception may be granted by a State where the owner or operator demonstrates that:

(a) the proposed facility will utilize the best available control technology,

(b) all existing sources owned or controlled by the owner or operator of the proposed facility which are in the same air quality control region as the proposed facility are in compliance either with all applicable emission limitations or with an approved schedule and time table for compliance under the implementation plan or an enforcement order issued under new section 113(d),

(c) the total cumulative emissions from the proposed facilities and the existing facilities at the proposed new facility location will at no time increase, and

(d) the total allowable emissions from all existing and proposed sources at the facility location after construction of the proposed facility will be sufficiently less than the total allowable emissions under the original implementation plan so as to represent reasonable further progress toward attainment of the ambient air quality standard, taking into account progress already made toward attainment of that standard.

After January 1, 1979, the exception can be granted only where all existing sources in the region owned or controlled by the owner or operator of the proposed facility are actually in compliance with all emission limitations under the applicable implementation plan.

#### DISCUSSION

The Clean Air Act prohibits the addition of any emissions of an air pollutant in any air quality control region or portion thereof where an ambient air quality standard for that pollutant has not been attained. This amendment restates the principle that no major emitting facility can be constructed in a region where emissions from the facility would prevent the attainment or maintenance of an ambient air quality standard.

The Committee is aware, however, that many metropolitan areas, including those where industrial development is most likely to take place, lie within air quality control regions where ambient air quality standards have not been attained and are not likely to be attained for some time in the future. The most logical and economical place for industrial expansion to take place is often at existing plant sites, in the vicinity of present industrial development.

Among other advantages, expansion may allow the maximum use of the productive capacity of existing facilities. An example is the "rounding out" of existing steel-making capacity where new facilities are added to take advantage of existing production capacity in integrated steel mills. Since the Act currently would not allow for the construction of any facility which increased emissions in the region so as to prevent attainment or maintenance of a standard for the pollutant in question, the bill provides an exception to allow greater flexibility in the administration of the Act and opportunity for growth of national industrial capability.

First, the proposed new facility or modification must incorporate the best available control technology, as determined by the State in

accordance with the same definition as under section 110(g)(6)(A), in the provision for the prevention of significant deterioration.

Second, all existing sources in that air quality control region which are owned or controlled by the owner or operator of the proposed facility must be either in compliance with applicable emission limitations or in compliance with the approved schedule and timetable for compliance under the implementation plan or a section 113(d) enforcement order. Existing sources need not actually be in compliance with final emission limitations, only with compliance schedules where such schedules have been established. Existing sources already in compliance with emission limitations also qualify for this exception. After January 1, 1979, all such existing sources in the region must be actually in compliance with the emission limitations applicable at that time in order to qualify for an exception. The term "emission limitation" in this subsection, of course, has the same meaning as defined in new section 302(i) of the Act.

Third, no increase in emissions of that pollutant from the proposed facility and the existing sources at the proposed facility location will be allowed at any time. The Committee intends by this condition to prevent a facility which is scheduled to be replaced by the new facility from being operated after the time in which the new facility is placed into operation. This is not intended to prevent start-up testing of a new facility prior to the shutdown of the facility to be replaced.

Fourth, the total allowable emissions from all existing and proposed sources at the proposed facility location must be no more than the total allowable emissions which the existing sources were required to achieve under the implementation plan or approved schedule and timetable for compliance in effect prior to the exception being granted. The provision requires that combined emissions from the existing and new facilities be sufficiently less than the previous total of all emissions from the site to represent reasonable further progress toward attainment of the ambient air quality standard.

The determination of what is reasonable further progress should take into account progress already made by the existing sources toward attainment of the ambient standard. In addition, the owner or operator should be allowed to take credit for reductions in emissions from sources not previously subject to emission limitations or otherwise required to be controlled under the implementation plan and for reductions in emissions beyond those required by the implementation plan. Where existing sources have installed the best available control technology and there is nothing further which can be done to move toward the ambient standards, the State may take into account progress already made in determining reasonable further progress.

Among the determinations which the State must make in order to grant this exception are the extent of compliance with approved schedules and timetables for compliance under the State implementation plan or with emission limitations, and what further progress can reasonably be required from the sources. These determinations by the State called for under this subsection are not subject to review by the Environmental Protection Agency. While the exceptions available under this new subsection must be included in a State implementation plan, the Environmental Protection Agency cannot disapprove a revision of a plan for this purpose except on procedural or statutory grounds.

The exception under this subsection is granted through revision of implementation plans. That may take place on a case-by-case basis with an individual hearing and plan revision for each source which proposes to avail itself of the exception. Emission limitations for the new facility, and, as appropriate for the existing sources, must be established. Those emission limitations become part of the implementation plans.

In a multistate region, the exception would be available where the State in which the proposed facility is located makes the necessary revision to its implementation plan, as long as all existing sources of the owner or operator throughout the region meet the requirements of this subsection, including paragraphs (1)(B) or (2).

## INTERNATIONAL POLLUTION ABATEMENT (SEC. 12)

### SUMMARY

Section 115 of the Clean Air Act is amended so that it provides only a mechanism for abatement of air pollution arising in this country and endangering the health or welfare of persons in a foreign country. The recommendations of any abatement conference conducted before enactment of these amendments continue to be in effect unless rescinded on grounds of obsolescence.

### DISCUSSION

Before 1970 the principal legal means for control or abatement of air pollution was the enforcement conference procedure. The Clean Air Amendments of 1970 substantially changed that, requiring specific emission limitations for every source of air pollutants, so that national ambient air quality standards could be met within statutory deadlines. The basic tool of enforcement became the State implementation plan with its enforceable requirements for every source. This replaced the abatement conference, a lengthy and uncertain process in which all parties—State, local, and Federal agencies and the polluter—were convened to negotiate a schedule for control of the emissions alleged to cause the problem.

The 1970 amendments, however, retained in section 115 the conference procedure for abatement of interstate air pollution, as well as international situations. The authority of section 115 has not been used, and the implementation plan approach for interstate air quality control regions has proven to be more successful in dealing with air pollution problems involving more than one State.

In fact, the Committee believes that the implementation plan approach is also more appropriate than the enforcement conference for international air pollution. Section 115 as revised, therefore, provides that the determination that emissions of air pollutants in the United States are endangering the health or welfare of citizens of a foreign country will require the State in which the source of those emissions is located to revise its implementation plan to control those emissions. Representatives of the foreign country may participate in the public hearings on the implementation plan revision.

## PRESIDENT'S ADVISORY BOARD (SEC. 13)

## SUMMARY

Section 117 of the Clean Air Act is amended to abolish the President's Air Quality Advisory Board.

## DISCUSSION

This Board had in fact been abolished earlier by administrative action, and the purpose of this amendment is to conform the law to that fact. Section 117 as amended continues to provide authority to the Administrator to establish advisory committees to obtain assistance in implementing the Act, and to compensate members of such committees.

## FEDERAL AGENCY COMPLIANCE (SEC. 14)

## SUMMARY

This section clarifies section 118 to provide that all Federal facilities must comply with all substantive and procedural requirements of applicable State implementation plans.

## DISCUSSION

Section 118 has been amended to indicate unequivocally that all Federal facilities are subject to all of the provisions of State implementation plans. Though this was the intent of the Congress in passing the 1970 Clean Air Amendments, some courts, encouraged by Federal agencies, have misconstrued the original intent. One Federal Court of Appeals has correctly construed the intent of Congress (*Alabama v. Seeber*, 502 F. 2d (5th Cir. 1974)).

Since the substantive requirements of the Clean Air Act and of State implementation plan would be unenforceable unless procedural provisions were also met, section 118 is amended to specify that, as in the case of water pollution a Federal facility is subject to any Federal, State, and local requirement, respecting the control or abatement of air pollution, both substantive and procedural, to the same extent as any person is subject to these requirements. This includes, but is not limited to, requirements to obtain operating and construction permits, reporting and monitoring requirements, any provisions for injunctive relief and such sanctions imposed by a court to enforce such relief, and the payment of reasonable service charges. The provisions of section 118 granting the President authority to exempt a Federal facility from compliance with local, State, or Federal requirements where specific conditions are met, are not altered by this amendment.

## COAL CONVERSION AMENDMENTS (SEC. 15)

## SUMMARY

The bill includes two amendments dealing with coal conversion. The first is a provision within the new section 113(d) compliance

date extension procedure for sources converting to coal. The other repeals section 119 of the Clean Air Act originally added by the Energy Supply and Environmental Coordination Act of 1974, and provides that the certifications and notifications required to establish the date for effectiveness of FEA prohibition orders shall be provided by the appropriate States rather than by the EPA Administrator. These provisions replace the current means of providing compliance date extensions for sources ordered to convert to coal by the Federal Energy Administration with the compliance date extension procedure established for all stationary sources under these new amendments. In addition, this section preserves the approach of section 119(d)(5) by adding similar language to section 111 of the Act.

Any source ordered to convert under section 2 of the Energy Supply and Environmental Coordination Act of 1974 or which converts to coal as a primary energy source because of actual curtailment of natural gas supplies under a curtailment plan proved by the Federal Power Commission or, for intrastate gas supplies, by a State regulatory commission, can receive an extension of the time for compliance with the applicable emission limitations until January 1, 1979 or 3 years after the date on which the conversion order is issued. In no event may the compliance date be extended beyond July 1, 1980.

The Committee recognizes that the present section 119 provides for greater Federal involvement in setting air pollution control requirements than the Clean Air Act generally contemplates. This was necessary during the short-term fuel shortages of 1973 and 1974 when the quickest possible response to the problem was required. The coal conversion program, however, has since become a long-term program and full State involvement is appropriate. Therefore, this section repeals section 119 and provides that certifications and notifications to the Federal Energy Administrator shall be provided by the appropriate States rather than by the Administrator of EPA.

The section further provides that references to section 119 in section 2 of the Energy Supply and Environmental Coordination Act shall be construed to refer to section 113(d) of the Clean Air Act (on delayed compliance orders) and to paragraph (5) thereof in particular.

#### DISCUSSION

The amendment provides for significant simplification in the process of imposing appropriate compliance schedules on those facilities which will be converting to coal and which will need improved air pollution controls in order to meet applicable requirements. For sources which would have been eligible for section 119(c) compliance date extensions, the regional limitation is abolished. The concept of the primary standard condition is preserved by allowing the appropriate State to issue an order under section 113(d) and to certify to FEA the date on which interim requirements provided for in section 113(d)(5)(B) can be met. In such cases, FEA could make its prohibition order effective no earlier than the date certified. In all other cases where a certification is required, the State would certify the date that applicable air pollution requirements could be met and FEA can make its prohibition order effective no earlier than that date. In the event that a converting source could not comply within the 3-year period

allowed by section 113(d)(5)(A), no delayed compliance penalty would be imposed under section 120 of the Act since the FEA would be able to make its prohibition order effective on the date the facility could in fact burn coal and comply with applicable air pollution requirements, including any order issued under section 113(d).

The repeal of section 119 also has the effect of eliminating the provisions for postponement of applicability of air pollution requirements to electric generating power plants which are scheduled for phaseout no later than January 1, 1980, for fuel exchange requirements to minimize adverse impact on public health and welfare, and for reports on progress and impacts of section 119(c) compliance date extensions. The provision preventing conversions to coal where the Administrator finds emissions of a non-criteria pollutant may cause a significant risk to public health is also eliminated. These provisions are no longer necessary or appropriate.

This section also preserves the approach of section 119(d)(5) as it relates to sources issued compliance date extensions by amending section 111 to provide that a conversion to coal by reason of an FEA prohibition order shall not be deemed to be a modification for purposes of the applicability of Federal new source performance standards. In addition, those sources which convert to coal from natural gas are also deemed not to be modifications. It is appropriate to preserve this exemption for facilities subject to FEA prohibition orders since these are, by definition, those which had the capability and necessary plant equipment to burn coal on June 22, 1974. The legislative history of the Energy Supply and Environmental Coordination Act discussing facilities subject to such orders is incorporated here by reference.

## STRATOSPHERIC OZONE PROTECTION (SEC. 16)

### SUMMARY

This provision adds a new part B to title I, containing new sections 151 through 159 to the existing law. This requires studies by the National Academy of Sciences and the appropriate research agencies to provide for a better understanding of the effects of human activities on the ozone layer and the effects of depletion of that layer on human health and welfare.

If the Environmental Protection Agency finds that halocarbon emissions from aerosol containers may endanger human health or welfare then it will, by January 1, 1978, propose regulations to restrict their manufacture and use. Similarly, the Environmental Protection Agency will, by April 1, 1978, propose regulations to control halocarbon emissions from other sources if needed to protect the public health or welfare.

There is also a provision for congressional review and one for expedited regulation, if needed, to protect the public from significant risk due to halocarbon emissions from aerosol containers.

### DISCUSSION

Encircling the Earth is a layer of ozone gas, mixed with the air of the stratosphere. Beginning 5 to 10 miles above the Earth's surface, this blanket of ozone molecules extends into space to a distance of about

30 miles. This layer protects the Earth from the ultraviolet radiation of the Sun.

Life on our planet developed, and has always existed, beneath the protective shield of this ozone layer. Although a modest amount of ultraviolet radiation from the sun does get through, producing both sunburns and skin cancers, most of it is absorbed by the ozone layer.

This part of the bill seeks to study the ozone layer, and to examine the potential impact on the ozone layer of a number of chemical compounds, especially those that go under the generic name of halocarbons. These chemicals, which typically combine chlorine with carbon and other elements such as fluorine or hydrogen, are used widely as refrigerants, aerosol propellants, cleaning materials, paint removers, and for the manufacturing of vinyl plastics and silicones.

When a halocarbon molecule escapes into the lower atmosphere, there is evidence that it slowly works its way up to the ozone layer. There, in the presence of the ultraviolet radiation from the sun, the halocarbons eventually are broken down. This reaction frees a chlorine atom. Once released, this chlorine atom can attach itself to a molecule of ozone (composed of three atoms of oxygen), causing a reaction that produces a molecule of oxygen (two atoms of oxygen) and a molecule of chlorine oxide (one atom of chlorine and one atom of oxygen). The chlorine oxide then encounters a single atom of oxygen, causing another reaction, which produces another molecule of oxygen and frees the single atom of chlorine to attack another molecule of ozone. And so on.

If unchecked, the continued and accelerated use of halocarbons could severely damage the shield of ozone protecting life on Earth. It has been estimated that a 10 percent reduction in ozone would produce a 20 percent increase in human skin cancer. In the United States, this would result in about 60,000 additional cases a year, although most such cases are curable. The National Academy of Sciences reported in 1975 that laboratory experiments simulating a 50 percent reduction of ozone showed significant inhibition of plant growth. Thus ozone depletion could bring severe damage to the food chain. The ozone layer also helps to determine climate, as the radiation it absorbs brings energy from the Sun. While definitive calculations are unavailable, some scientists argue that depletion of the ozone layer would bring a worldwide decline in surface temperatures, damaging crop production.

The problems with halocarbons were first identified in 1974 based on calculations of what happens to fluorocarbons (a common group of halocarbons containing fluorine) in the stratosphere. A report in June 1975 released by the Council on Environmental Quality and the Federal Council for Science and Technology, (the "IMOS" report by the Interagency Committee on Inadvertent Modification of the Stratosphere) stated:

The task force has concluded that fluorocarbons released to the environment are a legitimate cause for concern. It also has concluded that unless new scientific evidence is found to remove the cause for concern, it would seem necessary to restrict uses of fluorocarbons -11 and -12 to replacement of fluids in existing refrigeration and air-conditioning equip-

ment and to closed recycled systems or other uses not involving release to the atmosphere.

The National Academy of Sciences is currently conducting an in-depth study of man-made impacts on the stratosphere and will report in less than a year. If the National Academy of Sciences confirms the current task force assessment, the task force recommends that the Federal regulatory agencies initiate rulemaking procedures for implementing regulations to restrict fluorocarbon uses. Such restrictions could reasonably be effective by January 1978—a date that, given the concern expressed now, should allow time for consideration of further research results and for the affected industries and consumers to initiate adjustments.

This part of the bill is an effort to meet that concern.

This new part of the Clean Air Act directs the National Academy of Sciences and various Federal agencies to study the potential effects of human activities on the ozone layer, and the impact that any change in that protective ozone layer would bring to human health and welfare.

The Environmental Protection Agency is given the authority to regulate aerosol sprays which contain halocarbons, and other products and practices, to avoid danger to public health and welfare that might be confirmed by these studies. Authority to review and overrule any such EPA regulation of aerosol sprays is reserved to the Congress. EPA is also given the authority to move more expeditiously if that proves essential to protect the public.

This provision has its legislative origin in S. 1336, referred to the Committees on Public Works, Labor and Public Welfare, and Aeronautical and Space Sciences, and S. 1982, referred to the Committee on Public Works. Sponsors and co-sponsors of these bills then prepared a consensus bill for presentation to the Committee on Public Works. Although the Committee did not hold hearings on this issue, an extensive public record exists. Among others, the Subcommittee on the Upper Atmosphere of the Committee on Aeronautical and Space Sciences held 7 days of hearings in September 1975 on Stratospheric Ozone Depletion, and that record is incorporated within the record of the Committee on Public Works. Comments were received from the Committee on Aeronautical and Space Sciences, and those comments are reflected in this part.

The Committee decided it was appropriate and essential that the ozone protection provision appear in this bill and that it was clearly within the jurisdiction of the Committee on Public Works.

The key to the effectiveness of this part of the bill is a series of studies, research, monitoring, and reports on various problems relating to ozone depletion. The National Academy of Sciences is to study the inadvertent modification of the stratosphere from all sources. This requirement will be met by the one-year study by the Academy which is already underway on the short- and long range effects of ozone depletion on health and climate. That study, which will evaluate existing data, will help the Administrator of the Environmental Protection Agency determine whether any expedited regulations are

needed. The recommendations of NAS on further research will prove useful to EPA and other agencies.

Later, the Academy is to update that study, to consider stratospheric pollution from other sources and to look at replacements and alternatives for substances or processes that affect the ozone layer.

Studies by the Department of Labor are to provide information on possible economic losses caused by restrictions on halocarbons, as well as possible gains from the use of substitutes and the means to alleviate losses.

Studies by the National Aeronautics and Space Administration, the National Oceanic and Atmospheric Administration, the Department of Agriculture, the Department of Health, Education and Welfare, the Environmental Protection Agency, the National Science Foundation, and others are intended to examine the physics and chemistry of the stratosphere and the effects of possible changes in the ozone layer on human health and on other biological organisms and climate. All of the agencies must coordinate their efforts so as to avoid duplication and overlap and in order to use all existing capabilities. There is an early deadline for the first round of reports of October 1, 1976, but this can be met because it essentially requires accumulation of existing information. The second, October 1, 1977, deadline is also reasonable.

All agencies are required to solicit and consider the views of the Environmental Protection Agency so that all research and monitoring will help provide the information base for the Administrator's actions and possible regulation. To achieve this, the Administrator will chair an interagency management council composed of those responsible for the efforts of the other agencies with authority under this section, plus other agencies the Administrator may designate. The Council is to be responsible for review and coordination of research plans and funding, and expediting reports to ensure they are useful and timely.

The lead responsibilities for various areas of research should be as follows: the National Aeronautics and Space Administration for research, technology, and monitoring of the atmosphere, including the stratosphere (as provided for in NASA's authorization bill for fiscal year 1976); the National Oceanic and Atmospheric Administration for climatic and weather effects of changes in the ozone layer, as well as effects on ocean ecosystems; the National Institute of Environmental Health Science for effects of changes in the ozone layer upon human health; and the Department of Agriculture for biological and ecological effects other than on human health and ocean ecosystems.

It is expected that EPA will conduct additional studies of the mechanisms involved in and the impact of ozone depletion, including an examination of any adverse economic impacts which may result from depletion of the ozone layer. The efforts of any other agencies involved in these areas should be evaluated to avoid duplication and coordinated within the program.

The Environmental Protection Agency, within two years, must prepare a summary report to the Congress covering scientific knowledge about the ozone depletion problem, any findings and regulatory actions by the Agency in reference to halocarbons, recommendations concerning other threats to the ozone layer, and recommendations for longer-term research efforts.

The Administrator is given authority to regulate by 1978 those halocarbons used in aerosol containers, if such regulations are needed to avoid danger to public health and welfare. The special section on aerosol containers is required because they represent half the fluorocarbons produced in the United States.

The term "aerosol containers" refers principally to pressurized dispensing containers which are designed so as to discharge products directly into the atmosphere, producing an aerosol, not to pressurized containers which are designed to recharge closed systems containing halocarbons. Such other pressurized containers may be regulated under section 155.

The Administrator is required to restrict or prohibit the manufacture, sale, import, export, or use of aerosol containers containing halocarbons if the Administrator finds that halocarbon emissions from aerosol containers may reasonably be anticipated to cause or contribute to the endangerment of public health or welfare, based on the above studies and other information. The Administrator is expected to regulate such aerosol containers if he believes there is a risk in their continued use, even if the scientific evidence is not completely conclusive. This Committee believes, since depletion of the ozone layer is of such great potential harmful consequence, it is wise to exercise caution and ensure protection of the public health and welfare.

Proceedings may be initiated before October 1, 1977, in order to meet the time schedule for proposing regulations. If the required reports are not available in time, drafts or other available information shall serve as the basis of the findings of EPA. The Administrator must propose regulations by January 1, 1978, and promulgate final regulations by April 1, 1978, which go into effect unless either House of Congress, by majority vote, disapproves them within 90 days.

An alternate proposal that would have prohibited production of halocarbon aerosols for nonessential use by January 1, 1978, was discussed by the Committee. This proposal would have allowed a waiver of the prohibition, but only if the Administrator determined that their continued use created no significant risk to human health, safety, or welfare, a so-called negative burden of proof. However, the Committee preferred a two year administrative process, involving studies, and culminating in regulatory action based upon a positive finding.

The January 1, 1978, date was selected to allow sufficient time for further study, and to avoid a significant increase in adverse effects on the ozone layer, if in fact they occur as now predicted. If such adverse effects are found not to occur, this approach would avoid the economic and social dislocations which could result from a peremptory ban. This is consistent with the recommendation of the IMOS Committee, which stated that "restrictions could reasonably be effective by January 1978."

As a precaution, the bill also contains a section providing authority for immediate regulation of aerosol containers using halocarbons, if that proves necessary. The Administrator, before January 1, 1978, and upon finding that there is a significant risk of harmful effects to the public health and welfare from halocarbons emitted from aerosol containers, is required to promulgate regulations, using expedited administrative procedures, and also taking into account the economic impact of the depletion of stratospheric ozone.

This part also contains a third regulatory tool: EPA may propose regulations by April 1, 1978, to control halocarbon emissions from sources other than aerosol containers, if that is necessary. Then, final regulations would be promulgated within ninety days.

The Administrator, after hearing and upon a finding that halocarbons from sources other than aerosol containers may "reasonably be anticipated to cause or contribute to the endangerment of the public health or welfare", must propose regulations restricting the manufacture, sale, import, export or use of such sources to the extent necessary to avoid such danger, including limitations on emissions to the maximum extent feasible, taking into account costs of achieving such control and costs related to the depletion of stratospheric ozone.

Any violation of the regulations authorized under this part subjects the violator to a civil penalty of up to \$10,000 per day, at the discretion of the court. The ultimate consumer and user of aerosol containers is exempted from the penalty but will be subject to abatement action. EPA is given standing to apply in the U.S. district courts for a restraining order and injunction against violations of EPA halocarbon regulations.

International cooperation in research and regulation is encouraged. In view of the worldwide impact of any ozone depletion and the fact that half the world's halocarbon use is outside the United States, research efforts must be coordinated and a base established for international or regional regulation, if it becomes necessary.

Several States and localities have adopted or are considering adoption of regulations concerning fluorocarbon use. That right must be maintained, so long as it does not conflict with minimum Federal standards. While halocarbons released in one State could affect the ozone layer over all States, it is useful to allow discretion to those areas which choose to take the lead in protecting the environment.

The required funding has not been developed precisely. The total Federal stratospheric research related to the fluorocarbon-ozone issue was \$14 million in fiscal year 1975, and it is estimated at \$16 million for fiscal year 1976. The Committee has received estimates for health, biological, and climate-related research of \$5.5 million in fiscal year 1976, and \$13 million in fiscal year 1977. The shares required for each agency have not yet been defined. This task of distribution may best be performed by the Management Council and the agencies.

An authorization is provided through fiscal year 1977 for NASA, NSF and the Department of State. Further authorizations must come through their respective annual authorization bills. Other agencies are authorized such sums as may be necessary.

## TITLE II

### NEW HEAVY DUTY VEHICLES AND MOTORCYCLES (SEC. 17)

#### SUMMARY

This section amends sections 202 and 206 of existing law. The Administrator shall promulgate interim emission standards for hydrocarbons, carbon monoxide, particulates, and nitrogen oxides from heavy duty trucks, buses, and motorcycles applicable in model years 1979 and 1980, and possibly in 1978 if the Administrator finds

such early application appropriate. Such standards shall reflect the application of the best available technology taking into account the cost of compliance.

For model year 1981 and thereafter, the Administrator shall promulgate emission standards for motorcycles, heavy duty trucks, and buses which reflect the degree of reduction required for light duty vehicles in 1980 under section 202(b). The required reductions for heavy duty vehicles over 10,000 pounds shall be calculated from uncontrolled emission levels of gasoline-powered heavy duty vehicles. The Administrator may substitute standards based on best available technology if he finds that technology to achieve the reduction equivalent to light-duty vehicle requirements is not available, provided that such modified reduction is more stringent than the 1978-1980 interim standards.

#### DISCUSSION

The Clean Air Amendments of 1970 required a 90 percent reduction in auto emissions to meet health-related standards. The Act included no specific requirement for heavy duty vehicles and motorcycles. These vehicles were covered by the general provisions of section 202(a), requiring the Environmental Protection Agency to set standards on any class of new motor vehicle or engine likely to cause or contribute to air pollution endangering public health or welfare.

Heavy duty vehicles in 1975, according to EPA, produced 17 percent of the hydrocarbons, 14 percent of the carbon monoxide, and 19 percent of the oxides of nitrogen coming from mobile sources. Yet present regulations, first established for model year 1974 vehicles, require only modest levels of control: a 57 percent emission reduction in carbon monoxide from heavy duty gasoline vehicles, for example, compared with an 83 percent reduction from uncontrolled light duty vehicles. Emissions of nitrogen oxides from diesel heavy duty vehicles have actually been permitted to increase.

By 1990, when nearly all light duty vehicles can be expected to meet statutory standards, the total emissions from heavy duty vehicles will exceed those from light duty vehicles, unless more effective controls are applied.

The National Academy of Sciences has reported that "There is a need to complete the development of emission standards . . . for sources other than light duty vehicles. Of particular concern are exhaust emissions from heavy duty vehicles."

This section requires the Administrator to set an emissions standard for heavy duty vehicles and motorcycles that reduces emissions by a degree equivalent to that required of light duty vehicles from 1970 to 1980, with heavy duty vehicle reductions based on levels produced by heavy duty gasoline engines.

Interim heavy duty vehicles regulations planned by EPA should be promulgated to take effect in model year 1978, if that is feasible, taking into account the manufacturer's need for lead time. If not, these standards must be promulgated to take effect in model year 1979.

The interim standards are to be set at that level that can be achieved by "best available control technology, taking into account the cost of compliance." This is a performance standard, implying a specified

level of emissions. It is not an effort to dictate the technology to be used. The Clean Air Act has a mandatory licensing requirement on emissions technology, so that the technology developed by one manufacturer is available to all, with due regard to the time needed for tooling.

The 1981 standards require a reduction in emissions equivalent to the levels required by the standards established under subsection 202(b). For heavy duty vehicles over 10,000 pounds, this means a 90 percent reduction for hydrocarbons and carbon monoxide and a 75 percent reduction in oxides of nitrogen, compared with uncontrolled gasoline powered vehicles. For vehicles between 6,000 and 10,000 pounds (presently about 60 percent of vehicles sold of 6,000 pounds or greater gross vehicle weight) and motorcycles, the Administrator will have the option of prescribing standards which are the same, in grams per mile, as the light duty vehicle standards, to establish a baseline for a class or classes of vehicles and require the same percentage of control, or to include some or all of these vehicles in other classes such as light duty vehicles, light duty trucks, or heavy duty vehicles.

For 1981, the Administrator may promulgate a standard that is less stringent than the percentage reduction, as defined above, if it is determined that the technology is not available, or has not been available for a sufficient period of time, to meet the percentage requirement. In that case, the standard must reflect the best available technology, must represent an improvement over the previous standards, and must be an interim step toward achievement of the statutory percentage.

The standards for vehicles over 10,000 pounds are to be based on the uncontrolled levels from gasoline powered vehicles of specific weights, not diesel-powered vehicles. Diesel vehicles, which inherently emit less hydrocarbons and carbon monoxide, must meet the standards set for gasoline-powered vehicles.

The setting of baselines depends on the test procedures and driving cycles used. The Administrator should define baselines in such a way that emission levels will correspond closely to vehicles in actual urban use. The standard may be set in terms of grams per brake horsepower hour, if that is preferable.

At the time of passage of the 1970 Amendments, light duty trucks and recreational and utility vehicles under 6,000 pounds gross vehicle weight were included with automobiles as light duty vehicles. As a result of a court decision in 1973, EPA was required to establish a separate class for them, and did so. These vehicles should not be regulated any less stringently than automobiles. As automobiles are required to achieve greater degrees of emission control in the future, light duty truck emission standards must be tightened accordingly.

Under EPA's present definition, vehicles above 6,000 pounds are considered heavy duty vehicles. Even if some or all of them are assigned to a different class in the future, such vehicles must meet emission standards at least as stringent as those required for heavy duty vehicles and motorcycles by paragraph (3) of section 202(a), as added by these amendments. An example of this would be EPA's proposed redesignation of trucks between 6,000 and 8,500 pounds as light duty trucks.

The need for a standard for the pollutant particulate matter for motor vehicles was identified in the Senate report in 1970. None has yet been proposed, except for a smoke standard for heavy duty diesels. EPA has also reported that technology exists to achieve an opacity level of 35 percent, compared to the present standard of 50 percent.

EPA should promulgate a standard requiring best available control technology for smoke from heavy duty diesels and other particulate emissions from heavy duty vehicles and motorcycles by model year 1978, if possible, or by model year 1979. The particulates standard for 1981 and thereafter should be based upon an analysis of the extent to which particulates are likely to cause or contribute to air pollution endangering public health or welfare.

EPA's present practice is to certify heavy duty engines, rather than vehicles. The manufacturers and customers have stated a preference for this approach. The Committee intends that EPA certify only engines for use in various vehicle configurations and use patterns, rather than certify each vehicle, if the Agency determines that that approach continues to be appropriate.

Motorcycles are not controlled at present, although EPA has recently proposed regulations for model year 1978. Although the total emissions from motorcycles represent a relatively small fraction of emissions nationwide, they are significant in a number of areas and will have an increasing impact as other sources become effectively controlled. EPA's proposed emission standard for motorcycles in 1978 requires modest degrees of control. Nevertheless, it is reasonable to bring them under the certification procedures.

This bill also provides that the 1981 emission standards for motorcycles require a reduction in emissions equivalent to light duty vehicles unless the Administrator finds that technology is not or has not been available.

## AUTOMOTIVE EMISSION STANDARDS (SECS. 18, 19, AND 20)

### SUMMARY

These sections amend section 202 of existing law. The 1978 deadline for achievement of the hydrocarbon and carbon monoxide auto emission standards, which reflect a 90 percent reduction from 1970 emission levels, is extended to 1979. The existing 1977 interim standards of 1.5 grams per mile hydrocarbons and 15 grams per mile carbon monoxide are extended through 1978.

The nitrogen oxide ( $\text{NO}_x$ ) emission standard is modified from the 90 percent reduction requirement effective in 1978 to 1.0 grams per mile  $\text{NO}_x$  effective in 1980 for all automobiles sold in the United States. The existing 1977 interim  $\text{NO}_x$  standard of 2.0 grams per mile is extended through 1978 and 1979, with the additional requirement that each manufacturer must produce 10 percent of 1979 light duty vehicles to the 1980  $\text{NO}_x$  standard of 1.0 grams per mile. Any manufacturer whose production represents less than 3 percent of world sales of light duty motor vehicles is exempt from the requirement of a 1.0 grams per mile  $\text{NO}_x$  emission standard in 1979.

## DISCUSSION

The automobile pollution control program established under the Clean Air Act Amendments in 1965 required the Secretary of Health, Education, and Welfare to establish emission standards on the basis of technical and economic feasibility. By 1970, it had become apparent that progress under that yardstick was inadequate; that ambient levels of motor vehicle-related pollutants would not be brought down to the level necessary to protect human health at an early date; and voluntary technical development by the industry would not achieve emissions goals soon enough to respond to the public demand for clean air.

The Congress recognized that new vehicles in an auto-oriented society must meet very high standards of control. Therefore, the Clean Air Amendments of 1970 abandoned the "technical and economic feasibility" approach and adopted statutory standards and rigid timetables for achievement of those standards. The standards reflected that level of control needed to insure attainment of health-related air quality levels, according to calculations supplied by the National Air Pollution Control Administration in the Department of Health, Education, and Welfare.

The deadline for meeting those standards was the 1975 model year, which recognized the need of the industry's lead time to develop the necessary control technology and equipment. The standard for automobiles sold during model year 1975 and thereafter was to be a reduction in hydrocarbon and carbon monoxide emissions of 90 percent from levels produced by the 1970 cars, which already had achieved a modest degree of control. Similarly, in model year 1976, a 90 percent reduction in nitrogen oxide emissions was required, compared to a 1971 base.

Based upon current test procedures, these "statutory" standards became 0.41 grams of hydrocarbons per mile, 3.4 grams of carbon monoxide per mile, and 0.4 grams of nitrogen oxide per mile. Present cars (1976 models) are certified at 1.5 grams of hydrocarbons, 15 grams of carbon monoxide, and 3.1 grams of nitrogen oxides. This level of control, according to EPA testimony, represents "an 83-percent hydrocarbon, 83-percent carbon monoxide, and 11-percent nitrogen oxide reduction from precontrolled cars. Compared to the 1970-71 models upon which the statutory 90-percent reduction required by Congress is measured, and which had higher nitrogen oxide emissions than did precontrolled cars, the progress is 63, 56, and 38 percent respectively."

Since 1970, the deadlines for compliance have been modified twice by the Environmental Protection Agency (in 1973 and 1975) and once by Congress in legislation in 1974. Present law requires achievement of the statutory reductions on 1978 model cars.

With this legislation, the Committee makes three adjustments in the provisions of the Clean Air Act relating to control of auto emissions. First, the Committee has, by statute, changed the "statutory" standard of oxides of nitrogen from 0.4 gram per mile to 1.0 gram per mile. As discussed later in this report, the 0.4 gram per mile oxides of nitrogen standard is maintained as a research objective for the purpose of developing the technology to meet a more stringent standard, in case subsequent evidence justify such a standard.

Second, the Committee has voted to postpone by one year the achievement of the statutory standards for hydrocarbons and carbon monoxide (until 1979), with a 2-year delay in achievement of the statutory standard for nitrogen oxides (until 1980). This provides the industry with a 4-year moratorium from the standards set by the 1970 Act.

Third, the bill requires production of a limited number of vehicles in 1979 that will meet all three statutory standards. The purpose of this provision is to encourage the industry to begin phasing in the new emission control systems and techniques necessary to meet the statutory requirements on all automobiles in 1980. This phase-in will also provide the Administrator of the Environmental Protection Agency an opportunity to review the potential implications of the technology selected for 1980 before it is installed on 100 percent of production.

AUTO EMISSION STANDARDS TIMETABLE ESTABLISHED BY THE CLEAN AIR AMENDMENTS OF 1976

Model year	Emissions (grams per mile)		
	HC	CO	NO <sub>x</sub>
1976.....	1.5	15.0	3.1
1977.....	1.5	15.0	2.0
1978.....	1.5	15.0	2.0
1979.....	.41	3.4	<sup>1</sup> 2.0
	.41	3.4	<sup>2</sup> 1.0
1980.....	.41	3.4	1.0

<sup>1</sup> For 90 percent.

<sup>2</sup> For 10 percent.

The exact level of nitrogen oxide control required for public health protection has been a matter of some debate. The National Academy of Sciences has stated that the statutory 0.4 gram per mile standard may be somewhat more stringent than is needed to achieve the ambient air quality standard for nitrogen dioxide alone, but the Academy also indicated that there is a need for a short-term nitrogen dioxide ambient air quality standard in addition to the present annual average standard.

In addition, the Academy was concerned about the role of nitrogen oxides as precursors in the formation of photochemical smog (oxidant), saying "It is not certain, on the basis of these findings, that the ambient air standards for oxidant would be met in all large cities or locations downwind from cities if the nitrogen oxide emission standards were relaxed."

Furthermore, stationary sources are also a major source of nitrogen oxides. (According to EPA, for 10 major cities, stationary sources account for 53 percent of the nitrogen oxide, compared to 32 percent for light-duty vehicles and 15 percent for other mobile sources.) If the automotive NO<sub>x</sub> standard were set at 1.0 gram per mile, the light-duty fraction of the total would drop to 16 percent by 1985. As discussed later in this report, it is appropriate to place further emphasis on stationary sources for achieving health-related air quality improvements while adopting a somewhat more moderate standard for autos.

The Committee is concerned by the apparent inadequate effort on the part of the automotive industry to meet the statutory standards for oxides of nitrogen. According to an EPA report to the Subcommittee on Environmental Pollution, "not every reasonable technical alternative that had potential for meeting the statutory emission standard of 0.4 gram per mile nitrogen oxide emissions was fully explored by any individual automobile manufacturer, nor by the industry as a whole." That report notes that the efforts of some manufacturers directed towards the 1978 statutory emission standards have decreased sharply in the past year.

The Committee voted to set the statutory NO<sub>x</sub> standard at 1.0 gram/mile taking into account the necessary lead time for the industry. In some cases the available technology to meet this standard may require further development for efficient integration into the vehicle. A major factor in the decision to alter the statutory NO<sub>x</sub> standard was the recognition that this would expand the technological options open to the auto industry. The National Academy of Sciences identifies five of the most promising technologies for achieving the new levels of control: catalysts on conventional engines (2 kinds), new stratified-charge engines (2 kinds), and the passenger-car diesel.

The statutory hydrocarbons and carbon monoxide levels, according to the Administrator of the Environmental Protection Agency, could have been met on 1976 models. Public health and welfare demands that these reductions be achieved as soon as possible. In recognition of the time needed to integrate new emission control systems with fuel economy improvements, and to conclusively preclude, through testing, the creation of other unregulated emissions, the Committee delayed until 1979 the imposition of the statutory hydrocarbon and carbon monoxide standards.

In seeking the firmest route toward ultimate control, the Committee explored numerous alternatives for phasing in control techniques designed to meet the statutory standards. The provision in the bill requires that 10 percent of the 1979 model cars be built, certified, and sold to meet the 1980 NO<sub>x</sub> standard of 1.0 gram per mile.

There is broad flexibility in the bill to fulfill this 10 percent requirement. It may be achieved with cars built exclusively for sale in the State of California, if a manufacturer so chooses and if the manufacturers' sales in California represent at least 10 percent of its national sales. It can be fulfilled or supplemented by cars built under the preemption waiver provision, discussed later in this report. It could also be achieved across the Nation on any line or lines of cars. It could be achieved with a combination of these or other methods.

Marketing decisions are best left to the individual manufacturer. Therefore the Committee does not prejudice how best to achieve the sale of the 10 percent cars. But the Committee is convinced that the objective can be achieved without market disruption, as the percentage is a relatively small one.

The Committee initially considered imposing a phase-in percentage in 1978, but rejected that approach. However, the auto industry should consider beginning to build some cars that meet the statutory requirements in model year 1978. This may only involve the production of 50,000 cars, possibly cars sold to the Federal Government. But it

would be in the interest of the industry and the public that such an effort be made to provide practical experience with newer technology. The Committee would expect Federal agencies (particularly the General Services Administration), as well as State and local agencies to assist where feasible and to indicate an intent to purchase such vehicles.

The bill contains one exception to the 10 percent requirement in recognition of the fact that smaller manufacturers generally adopt technology of the major manufacturers. Those manufacturers which sell less than 3 percent of world unit sales in model year 1976 need not meet the 10 percent phase-in requirement. On the basis of current production statistics, nine manufacturers (3 domestic and 6 foreign) would be required to comply with the phase-in standard. American Motors Corporation and certain smaller foreign makers would be exempt. All manufacturers, of course, would be required to meet any standard set by California or a pre-emption waiver State.

Some cars certified for sale in California in the current model year actually come very close to meeting the 1980 standards proposed by this bill with deterioration factors included. Although these were among the best performing cars, they represent a wide range of sizes, bodies and manufacturers.

Production vehicles of the 10 percent category should be made available to EPA for a technology assessment and evaluation of unregulated emissions. While 1 year is a short period of time for such a technology assessment, the auto industry develops production prototype vehicles for emission certification at least one year prior to the introduction of a new vehicle. Thus, ample opportunity exists to identify any unacceptable adverse impacts of any new techniques selected by the industry to meet statutory standards.

In the evaluation of various levels of emission control and the availability, cost, and possible fuel penalty of the technology that may be used, EPA has reported that it is technically feasible to achieve any of the currently legislated emission standards. An independent assessment by the National Academy of Sciences' Committee on Motor Vehicle Emissions confirms that judgment. The following table is adapted from the National Academy of Sciences report:

COMPARATIVE EMISSION CONTROL COST DATA FOR VARIOUS SYSTEMS AND EMISSION

[Levels based on intermediate 6-cylinder vehicles]

Emission level and vehicle system	Miles per gallon	Increase in lifetime cost				Dis-counted life Total
		Sticker price	Fuel	Maintenance	Total	
Fed. 1970 3.9/33/6 (base).....	13.2	0	0	0	0	0
Fed. 1973-74 3.0/28/3.1 (modified).....	12.1	\$51	\$296	\$325	\$672	\$557
Fed. 1975 1.5/15/3.1:						
Modified conventional.....	12.4	78	210	325	613	512
Oxidation catalyst.....	13.5	123	76	100	298	265
Senate 1980 0.4/3.4/1.0:						
Dual catalyst.....	12.9	249	230	75	554	500
3-way catalyst.....	13.5	326	75	12	413	398
CVCC stratified-charge.....	12.2	209	267	200	676	575
CCS stratified-charge.....	14.5	273	-499	38	-188	-111
Diesel.....	15.0	167	-458	-25	-316	-234

Source: NAS Committee on Motor Vehicle Emissions Report, November 1974, p. 89.

The manufacturers estimated the cost of clean up at \$150–\$400 per car. The National Academy of Sciences says that the added cost to meet the statutory standards would be \$44–\$203, compared with a conventional engine with a catalyst meeting the 1975 standard.

The costs of emission control are real, but they are reasonable in relation to the public benefits achieved. They are generally less than the cost of individual items of optional equipment sold by the manufacturers for the purpose of comfort, convenience, and styling.

The relation between fuel economy and emission control received careful attention. EPA has stated that "There is no inherent relationship between exhaust emission standards and fuel economy." The result depends on the choice of technology. This was shown dramatically in the 1976 model cars, which obtain 26 percent better gas mileage than the 1974 models, while meeting more stringent emission standards. The Department of Transportation/Environmental Protection Agency report on the "Potential For Motor Vehicle Fuel Economy Improvement" identified methods for improving fuel economy by over 40 percent with no change in engine design concepts.

The National Academy of Sciences has estimated that present statutory standards (including a 0.4 gram per mile nitrogen oxide standard) could be met with catalyst technology with a fuel penalty of between 0 and 2 percent. That effect should be lessened with the relaxed  $\text{NO}_x$  standard. The automobile manufacturers, on the other hand, projected figures for various emission requirements which suggest a loss of fuel economy of 15 percent or more using the 1980 standards adopted by the Committee.

The industry and others suggested a more lenient statutory  $\text{NO}_x$  standard than the 1.0 gram recommended by the Committee. It appears that the less strict standard would merely encourage the use of inferior, fuel-inefficient technology. The 1.0 gram-per-mile standard is expected to require new levels of technological development with fuel economy benefits.

The Committee discussed establishing a 1.5  $\text{NO}_x$  standard as the statutory standard. This standard was rejected as not adequate to protect public health and not likely to lead to the introduction of new, improved technology. During hearings held by the State of California in 1975 to consider the adoption of more stringent standards, U.S. auto companies testified that the systems likely to be used in meeting a 1.5  $\text{NO}_x$  standard would be an oxidation catalyst, exhaust gas recirculation, air pump, and a second warm up catalyst, as well as the possibility of other additional "add-on" technology. There was little indication in the California hearings that the industry would use more advanced techniques to meet the 1.5  $\text{NO}_x$  standard. Therefore, the Committee feels that for health protection reasons (from both street level exposures of nitrogen dioxide and sulfate) and for the stimulus of improved technology the 1.0  $\text{NO}_x$  standard is superior to a 1.5  $\text{NO}_x$  standard.

The Committee considered and rejected, as a basis for a moratorium on auto emission standards, the potential harm of sulfate emissions from catalyst-equipped automobiles. After three years of concentrated study of various aspects of the issue by the government, industrial, and academic communities, there remains a great deal of uncertainty and disagreement as to the magnitude of the problem.

In March, 1975, Administrator Train determined that the potential health impact of sulfate emissions warranted a one-year delay in the implementation of the 1977 deadline for achievement of the statutory hydrocarbon and carbon monoxide standards, despite the recognized availability of technology to achieve those standards. For the same reason he recommended a further delay until 1982 coupled with the promulgation of a sulfate emission standard in 1979.

The Committee balanced that uncertainty against the clear need to reduce emissions of hydrocarbons, carbon monoxide and nitrogen oxides to achieve health-related ambient air quality standards.

The Committee determined that, while statutory standards could be achieved with available technology, there is no precise knowledge of (1) the health effects of various levels of sulfuric acid and suspended sulfate emissions; (2) the emission rates of sulfates from catalyst cars with air pumps, catalyst cars without air pumps, and non-catalyst cars; and (3) the air quality impact of these unquantified emissions and resultant human exposure to those uncertain concentrations.

Concerned by the possibility that excess oxygen from air pumps increases the conversion of fuel sulfur into sulfate within the oxidation catalyst system, the Committee extended the 1977 interim standards of 1.5 HC, 15 CO, and 2.0 NO<sub>x</sub> through 1978, rather than mandating the current (1975-76) California standards of .9 HC, 9.0 CO, 2.0 NO<sub>x</sub>, which are currently being met with wide use of air pumps and oxidation catalysts. The likelihood that no new technology would be employed at those levels nationally was one reason for going directly to the .41 HC, 3.4 CO standards in 1979 to encourage the use of technology which would not exacerbate the sulfate problem.

The Committee has also authorized a one-year study on the measurement of sulfur emissions from mobile sources, the health impacts of such emissions and the control options available. The Committee notes that under section 211 of existing law, the Administrator can require the desulfurization of fuel should compelling data on these unknowns indicate an immediate need for control of sulfate emissions prior to the implementation of a sulfate emission standard. This was precisely the strategy proposed by Administrator Russell Train in November, 1973 when he determined that the sulfate controversy did not warrant deferral of the auto clean-up schedule or prohibition of the use of catalyst.

The Committee also notes that the Administrator has determined tentatively that the sulfate emissions from non-catalyst cars and non-air pump catalyst cars are approximately equal. This modifies his March, 1975 position that even without an air pump, catalyst cars appeared to emit substantially more sulfate than non-catalyst cars. The high estimates of sulfate emissions from air pump catalyst cars remain unchanged. The text of Mr. Train's letter follows:

U.S. ENVIRONMENTAL PROTECTION AGENCY,  
Washington, D.C., August 28, 1975.

HON. EDMUND S. MUSKIE,  
*Chairman, Subcommittee on Environmental Pollution, Committee on  
Public Works, U.S. Senate, Washington, D.C.*

DEAR MR. CHAIRMAN: Thank you for your letter of August 1 in which you request that we provide to the Subcommittee on En-

vironmental Pollution any information on automobile emissions that may now be available and that may not have been available to the Subcommittee when it considered these issues on July 17.

With one exception, we believe that in the course of our testimony before the Subcommittee, and through the provision of written materials, we have fully shared with the Subcommittee all information on automobile emissions that is presently available to us. The one exception involves the tentative results arising out of our project to develop a sulfuric acid emission standard for automobiles, to be applicable starting with the 1979 model year. These results became available about July 17.

Although we have so far been disappointed by an inability to develop a test procedure by which the sulfuric acid emissions measured from an individual car over a series of repeated tests are about the same (it is not yet clear whether the test-to-test variability experienced is due to the test procedure or to erratic behavior of the vehicles themselves), one preliminary result of our extensive test program seems extremely significant. It appears now that the emissions of sulfuric acid from catalyst equipped cars without air pumps are in about the same very low range as are the sulfuric acid emissions from non-catalyst cars, and that the sulfuric acid emissions from catalyst equipped cars with air pumps appear to be much higher—in terms of the ratio of such emissions to the emissions from catalyst cars without air pumps—than we had estimated earlier this year.

You will recall that in my March 5, 1975, Suspension Decision document I indicated that on the basis of data then available it appeared that sulfuric acid emissions roughly double when an airpump is added to a catalyst car. I also indicated that even without an airpump a catalyst car appeared to emit substantially more sulfuric acid emissions than did a non-catalyst car. Now with much more test data than was available in March, we must revise that estimate.

If the pattern emerging from the current test program is confirmed by our ongoing tests, it appears that there may be little or no difference in the emissions of sulfuric acid from non-catalyst and from non-airpump catalyst cars. These data do not suggest that airpump-equipped catalyst cars put out much more sulfuric acid than we estimated last March. Rather, it now appears that non-catalyst cars put out slightly more sulfuric acid than we had estimated, that non-airpump catalyst cars put out significantly less than we had estimated, and that the air pump-equipped catalyst cars emit in the range of our earlier estimates.

I must strongly emphasize that the above conclusions are still tentative. We have a lot more work to do before we can draw more confident conclusions. But we have substantially more data than we had last March, and thus the statement in the foregoing paragraph represents a better estimate than our estimate last March. Hence, the caution that caused me to make my decision and suggestions last March 5 appears still to be warranted as regards the timing of emission standards more stringent than the current Federal Interim levels. As I indicated in my March 5 Suspension Decision Document I would not recommend standards more stringent than the current interim levels

until we have established the appropriate limits on sulfuric acid emissions or concluded they pose no danger to public health.

The airpump utilization issue may also affect the level of  $\text{NO}_x$  emissions for 1977 and subsequent model years. As you know, 1977 model year cars, which will soon begin their certification testing, will have to meet a 2.0 gm/m  $\text{NO}_x$  standard, compared to the current 3.1 gm/m standard. It is the view of our engineers that through the use of the best available exhaust gas recirculation technology it should be possible for the auto industry to meet a 2.0 gm/m  $\text{NO}_x$  standard in 1977, while concurrently meeting the 1.5 gm/m HC and 15 gm/m CO standard, *without* adding airpumps. However, as noted in my Suspension Decision, we cannot provide assurance that the industry will in fact avoid the use of airpumps in the 1977 model year. Nor can we yet demonstrate that non-airpump catalyst cars calibrated to meet 1.5 HC, 15 CO, and 2.0  $\text{NO}_x$  will continue to emit sulfuric acid at about the same low levels as appear to apply to non-airpump catalyst cars calibrated to meet the 1975-76 standards. We expect to obtain and test cars so designed and calibrated, as a part of our program to develop a sulfuric acid emission standard, and should be able to provide at least a preliminary answer to this question within six weeks.

I hope that the foregoing discussion of recently developed data is helpful to the Subcommittee in its forthcoming deliberations. I or our technical staff will of course be available to assist you in the consideration of these matters in any manner in which you desire.

Sincerely yours,

RUSSELL E. TRAIN, *Administrator.*

The Administrator recommended a delay until 1982 based on the potential health impact of sulfates, with interim standards in 1980 and 1981 of .9/9.0/2.0 which could maximize sulfate emissions. However, the Environmental Protection Agency is not able to propose a sulfate emission standard at this time and will not promulgate such a standard for the 1979 model year as originally planned, because of the uncertainties which remain unresolved. In light of these uncertainties, the Committee cannot justify a delay later than 1979 since public health needs exist and requisite technology will be available.

Existing law allows the Administrator to set standards more stringent than those established in the statute for HC/CO/ $\text{NO}_x$  by Congress, and that discretionary authority is preserved by the Committee's actions in the 1976 Amendments. Rapid clean up of automobiles is necessary to avoid placing undue reliance on transportation controls.

As one example, the attainment of the health-related primary standard in the Washington, D.C. Metropolitan Area requires a 70 percent reduction in pollutants. Each year cars are built to the statutory standards will bring a 5 percent reduction in the volume of those auto-related air pollutants in the District of Columbia area. Thus, over five years, the auto-related pollution in the Nation's Capital would be reduced by 25 percent. To attain the same level of control in the same time period would require very demanding transportation control measures.

## NITROGEN OXIDE RESEARCH OBJECTIVE (SEC. 21)

## SUMMARY

This provision amends section 202(b) of existing law. The .4 gram per mile  $\text{NO}_x$  standard which reflects a 90 percent reduction from uncontrolled emission levels becomes a research objective. The Administrator of the Environmental Protection Agency must promulgate regulations within 180 days after enactment which require each auto manufacturer with domestic sales of at least .5 percent of total domestic sales to build demonstration vehicles to meet a .4 gram per mile  $\text{NO}_x$  level. Such demonstration vehicles shall be submitted to the Environmental Protection Agency no later than model year 1978 and in each model year thereafter.

## DISCUSSION

These amendments eliminate the present requirement of law that oxides of nitrogen from cars are to be reduced ultimately by 90 percent from 1971 levels. Based on current measurements, a new standard of 1.0 gram of  $\text{NO}_x$  per mile will replace the current standard of 0.4 gram. Nevertheless, the bill retains the requirement that the auto industry continue a research program that could in time lead to the manufacturing of vehicles capable of achieving the 0.4  $\text{NO}_x$  emission standard.

An EPA report of May, 1975, identified substantial weaknesses in the industry's  $\text{NO}_x$  research and development programs: The report concluded the "automotive industry has not in most cases combined all of their best systems on test vehicles," and the industry "has not vigorously pursued and fully exploited the developments of independent vendors." Under the procedure of this bill Agency must promulgate regulations that establish requirements for that research program.

It must be noted that the industry has suggested to the Congress that it work with the EPA in designing, building, and testing such research cars, with the caveat that current standards be delayed indefinitely. Such a trade-off is not in the public interest.

The requirement of this section is not a judgment that the 0.4  $\text{NO}_x$  standard will be resurrected. Rather, it seeks to create a situation in which there may be a capacity to meet such a standard, if ambient standards so require. Without this requirement, it is certain that the efforts of the industry would be even less than the programs undertaken to date. Systems designed under this program should be designed to be marketable, and have good performance and fuel economy characteristics.

This section extends to all manufacturers with at least  $\frac{1}{2}$  of 1 percent of the U.S. auto market. The program should make a particular effort to develop new propulsion systems, such as the Sterling engine.

## NATIONAL ACADEMY OF SCIENCES STUDY (SEC. 22)

## SUMMARY

This section amends section 202(c) of existing law. The Administrator shall contract with the National Academy of Sciences for

continuing studies on the health effects of auto-related pollutants, including sulfur compounds, and on the technological feasibility of achieving the emission standards set for such pollutants.

#### DISCUSSION

The 1970 Act required that EPA establish a contractual arrangement with the National Academy of Sciences to investigate and report on the technological feasibility of achieving the standards mandated in that Act.

The Committee intended that a continuing contractual arrangement with the Academy be maintained. The Agency, however, has at numerous points attempted to terminate that relationship and has restored the contract only after congressional insistence. Most recently, after the publication of the studies by the National Academy of Sciences' Committee on Motor Vehicles Emissions in November of 1974, EPA terminated this arrangement.

The studies by the National Academy of Sciences shall be resumed under appropriate contractual arrangements and EPA is expected to provide periodic reports to the Congress detailing the nature of the contractual arrangements. The Committee further intends that the reports from the National Academy of Sciences be received by EPA and the Congress with regularity until the final statutory standards established in the reported bill are achieved for all cars.

It was the intent of the 1970 Amendments to produce two independent sources of technical advice for the Congress to assist in its decisions. Those two sources were the technical staff of the Environmental Protection Agency and the National Academy of Sciences. Without the establishment and continuation of a permanent staff in the National Academy of Sciences and stable funding for a permanent Committee, the Congress and the public would lose an important source of technical expertise on these questions.

#### USEFUL LIFE FOR MOTORCYCLES (SEC. 23)

##### SUMMARY

This section amends section 202(d) of existing law to provide that the useful life of any motorcycle and any motor vehicle or motor vehicle engine not included in the light duty vehicle category shall be determined by the Administrator.

##### DISCUSSION

Under the Clean Air Amendments of 1970, the emission control systems of any vehicle had to be certified and warranted for a "useful life" of 5 years or 50,000 miles, or, at the Administrator's discretion, a period "of greater duration or mileage."

While that yardstick is a reasonable one for automobiles, and grants flexibility to meet the greater durability of heavy-duty trucks, it is clearly inadequate for motorcycles; motorcycles simply do not last 50,000 miles. Yet motorcycles require effective controls. A typical large two-stroke motorcycle emits 20 grams of hydrocarbons per mile, 13 times the allowable hydrocarbons standard on 1976 cars and 45 times the statutory standard. Typical carbon monoxide emissions from

a large two-stroke or four-stroke motorcycle run about 35 grams per mile, 10 times the statutory standard for cars.

To correct this inflexibility in determining "useful life" and to enable the Environmental Protection Agency to establish a reasonable mileage standard for motorcycles, the bill authorizes the Administrator to establish a useful life on other types of vehicles, including motorcycles, based upon his judgment of what is reasonable.

## TAMPERING (SEC. 24)

### SUMMARY

This section amends sections 203 and 205 of existing law. The existing prohibition on the removal of or tampering with emission control systems by a manufacturer or dealer prior to the sale and delivery of a motor vehicle is extended to tampering following the sale and delivery of a motor vehicle. The prohibition covers repair and service shops and selling, leasing, trading and fleet operations, which are subject to a civil penalty of not more than \$2,500 for a violation of this provision.

### DISCUSSION

Section 203(a)(3) of the Clean Air Act of 1970 prohibited any person from removing a motor vehicle pollution-control device prior to the sale of the vehicle, and made it illegal for "any manufacturer or dealer knowingly to remove or render inoperative any" pollution control device after the vehicle's sale and delivery to the ultimate purchaser.

This provision has been effective in assuring that new cars have not been altered prior to delivery to the customer. But the emission control system of a new car may be modified at any time thereafter. Under present law, any person independent of a manufacturer may disconnect a pollution control system without penalty.

In the wake of the fuel crisis of 1974 and the resulting national concern over fuel economy, many private service garages advertised extensively their emission control removal services, allegedly to produce increases in fuel economy. Emission control removal manuals were marketed. Studies by the Environmental Protection Agency during the energy crisis indicate that such practices assure only that emissions will increase dramatically and usually without any improvement in fuel economy. While some States have adopted their own prohibitions against tampering, most of these prohibitions are not enforced effectively.

Section 24 of the amendments extends the prohibition on tampering with emission control systems or element of design to any person engaged in the business of repairing, servicing, selling, leasing, trading, or fleet operating motor vehicles or motor vehicle engines, after the sale and delivery of the vehicle to the ultimate purchaser. Tampering includes not only the removal of add-on pollution control devices and the disconnection of elements in the pollution control system but it extends to the purposeful setting of engine adjustments to other than manufacturers' recommended specifications. For example, the setting of the idle fuel flow to result in excessively rich mixtures at idle would be considered tampering. Data from the Environmental

Protection Agency in-use surveillance programs reveals that large numbers of vehicles in actual use exceed emissions standards by significant amounts. A limited amount of this high emissions performance is attributable to tampering, including intentional adjustment of the vehicle to other than manufacturers' specifications.

This bill also amends section 205 of the Act to establish a monetary penalty for tampering by non-manufacturers and to clarify that tampering by anyone is a separate offense with respect to each motor vehicle or motor vehicle engine involved.

Section 205 of existing law is amended to assess a civil penalty of up to \$10,000 per vehicle against any manufacturer who violates this anti-tampering provision, and to impose a civil penalty of up to \$2,500 per vehicle against any other person who violates the anti-tampering provision.

The language of this anti-tampering provision, of course, is not meant to prevent the temporary removal of an emission control device or system for the purposes of servicing or maintaining any car.

This provision in no way diminishes the acceptability of using parts produced by the independent aftermarket industry rather than parts made by the original manufacturer. Service outlets, dealers, or individual vehicle owners who use parts certified under the voluntary certification program established in these amendments are not affected by this tampering provision except where the use of such parts or the service performed would adversely affect the emission control system of the vehicle.

## AFTERMARKET PROVISIONS

### SUMMARIES

#### MAINTENANCE INSTRUCTIONS (SEC. 25)

This section amends sections 203 and 207 of existing law. The manufacturer is required to furnish to the ultimate purchaser of a new motor vehicle written instructions for the proper maintenance and use of the vehicle which conform to the regulations which the Administrator shall promulgate.

Such instructions shall not include any condition on the use of any component of service identified by brand, trade or corporate name. Nor shall the instructions distinguish in any way between service performed by an agent of the manufacturer and service performed by independent automotive repair facilities. This prohibition may be waived by the Administrator if the manufacturer satisfies the Administrator that such component or service is essential for the proper functioning of the vehicle and the Administrator finds that such a waiver is in the public interest.

The manufacturer must also affix a label to each such vehicle indicating that it conforms with applicable emission standards. The label shall contain such other information as the Administrator shall prescribe by regulation.

#### MOTOR VEHICLE PART CERTIFICATION (SEC. 28)

This section amends section 207 of existing law. The Administrator of the Environmental Protection Agency must promulgate regula-

tions implementing a program to certify that motor vehicle parts made by other than an auto manufacturer will meet the performance standards of the original equipment installed by the manufacturer.

No warranty shall be invalid on the basis of the use of any such certified part.

#### AFTERMARKET COMPONENTS (SEC. 29)

This section amends section 203(a)(4) of existing law. The manufacturer may not condition the warranty of an emission control system upon the use of any component, system or service of such manufacturer unless the Administrator finds under section 207(c)(3) that such specific component or service is essential to the proper functioning of the vehicle.

#### REPLACEMENT COST (SEC. 27)

This section amends section 207(a)(1) of existing law. The cost of any light duty motor vehicle part or component for emission control which is scheduled for replacement during the useful life of the vehicle and which has a retail price greater than \$75, shall be included in the original purchase price of the vehicle and provided without cost to the ultimate purchaser when it is replaced.

#### WARRANTY STUDY (SEC. 39)

A study of the impact on competition of any warranty required pursuant to the Clean Air Act shall be made by the Bureau of Competition of the Federal Trade Commission, in consultation with the Bureau of Consumer Affairs, the Environmental Protection Agency, and the Department of Justice. Such study shall include analyses of any measures taken by the Environmental Protection Agency to prevent or diminish potential impacts of warranty requirements on competition, and of the potential competitive impact of a warranty applicable over the actual useful life of a vehicle. Such study shall also include public hearings.

#### DISCUSSION OF AFTERMARKET PROVISIONS

The Committee has taken action to insure that no anticompetitive effect will occur as a result of emission control warranties under the Act.

These actions include:

- (1) requiring all owner's manuals to contain instructions that maintenance does not have to be performed by the dealer or with the manufacturer's own parts;
- (2) making illegal any warranty provision that attempts to tie coverage to the use of the dealers service and parts;
- (3) establishment of a program which will enable aftermarket parts manufacturers to certify that their parts perform as well as the auto manufacturers' (the auto manufacturers have no role in approving such certification); and
- (4) A Federal Trade Commission study of any anticompetitive effect that might still exist.

The Clean Air Amendments of 1970 required that the manufacturers of motor vehicles warrant those vehicles in two ways. The section 207(a) warranty required that the car be "free from defects in materials and workmanship" and designed to meet the standard. The second warranty, section 207(b), required the manufacturer to warrant the performance of the "emission control device or system" for all new cars, after an in-use test was available that "is reasonably capable of being correlated with tests" conducted in certifying the car prior to production.

The latter warranty—the "performance" warranty—was included to assure that new cars not only complied with the emission control standards for which the buyer had paid, but were calibrated and subjected to the adequate quality controls necessary to assure that the car would meet the specified emission standards during the car's "useful life" of 50,000 miles. The industry can reasonably be expected to so design its emissions systems and provide the requisite quality control only to the extent that it is legally exposed under a warranty. In support of this view, the Environmental Protection Agency has stated that "strong warranty provisions are essential if the clean air goals of the Act are to be achieved."

At present, no Federal regulations exist to implement the section 207(b) warranty because no short, in-use test is available. But the existence of the warranty requirement creates a healthy situation in that the industry may face this warranty in the future and thus must design systems that are durable and effective.

The EPA has begun drafting regulations in anticipation of the development of such a test. Concern was expressed that the "defects" or the "performance" warranty would produce an anticompetitive effect. The Environmental Protection Agency has commented that "the aftermarket has demonstrated no present loss of business resulting from the Act," and that any anticompetitive problem is entirely prospective. Nevertheless, the Committee has included several sections in the bill to foreclose this possibility.

In commenting on the potential effects of the section 207(b) warranty, the Federal Trade Commission advised the Environmental Protection Agency of its concern that the warranty provisions might prove "anticompetitive," if they unfairly tie the car-owner to the new-car dealer. The FTC recommended two actions to prevent this; both have been adopted in the bill, along with other provisions to foreclose any anticompetitive effects.

The manufacturer is prohibited from voiding any 207(b) performance warranty on the basis that a replacement part was not made or installed by the manufacturer or its representative. The independent manufacturer of parts is authorized to certify to the customer that the part will not "result in a failure of the vehicle or engine to comply with emission standards." The Administrator is given one year to establish regulations for such self-certification procedures. Any part built and sold prior to the effective date of such procedures is assumed to have been certified.

Implementation of these amendments will enable a consumer to discharge the proper maintenance obligation under section 207 by making a reasonable effort to obtain proper maintenance, as in the

use of a certified part, without having to counter a charge by the vehicle manufacturer that the non-original equipment part caused the emissions failure. The threat of such conflict might otherwise induce owners to avoid non-original parts in favor of original equipment parts, which are frequently more expensive.

This amendment will help any aftermarket part manufacturer who elects to certify to avoid any significant anticompetitive effect of the warranties under section 207. The manufacturer is also required to provide written instructions to the buyer on the level of proper maintenance needed to maintain the warranty, based on EPA regulations for proper maintenance.

The manufacturer is prohibited from imposing any condition that the car owner use any component or service, identified by brand name or furnished by a franchised dealer, unless that component or service is provided at no further cost to the owner. There is one exception to this requirement. If the manufacturer can demonstrate to the Administrator that such a captive part or service is essential to the car's operation, and if EPA finds that the exception is in the public interest, including a consideration of its impact on competition, then the Administrator may grant an exception. The Committee intends that the manufacturer will have a significant burden in making such a showing and would expect the Administrator to consult with Congress before making such an exception.

This amendment, in conjunction with the part certification provisions, clarifies that the burden on the consumer to seek proper maintenance to protect his section 207 warranty coverage is not to be unnecessarily increased by suggesting that maintenance must be sought in particular parts or service establishments. This amendment will also provide the manufacturer with an incentive to develop approaches to necessary maintenance which are not dependent on highly specialized training or restrictive part specifications which would not be in the public interest. The manufacturer must continue the practice presently required by the statute of labeling a vehicle or engine as covered by a certificate of conformity and containing such other information relating to control of motor vehicle emissions as the Administrator shall prescribe by regulation.

The manufacturer is prohibited from communicating in any way to the car owner that the warranty is conditioned on the use of parts or service provided by the manufacturer or his dealers. Anyone violating this provision is subject to a civil penalty of up to \$10,000 per car, under the terms of section 203(a)(4).

It is noted that section 111(d) of the Magnuson-Moss Act (P.L. 93-637) prohibits such dealer tie-ins, and the Federal Trade Commission has been examining warranties carefully to prevent even the most subtle tie-ins.

The bill also addresses problems that could arise if a manufacturer certifies a car as requiring a replacement prior to the 50,000 miles of any part or device "principally for emissions control." When the vehicle industry uses parts related solely to emissions control, it can and should build them to avoid periodic replacement. But in those rare instances when that is not feasible, the cost should be included as an initial part of the price of the vehicle, not added later. This is intended to affect only major parts which are a part of the vehicle

solely for emission control purposes, such as the catalytic muffler, air pump, or thermal reactor. It does not extend to spark plugs or any part of the system necessary for the basic operation of the vehicle. And this requirement only extends to parts that cost at least \$75, including installation. The replacement cost provision does not apply to heavy duty vehicles.

The Committee is aware that there is potential for manufacturers to charge for such replacements, which are then never installed. The Administrator should discourage such a replacement plan, and must closely monitor the replacement outlays versus the sums paid by consumers under this provision.

A related problem involves the legal handling of any warranty on parts that affect emissions, but are not installed primarily for emissions control, such as spark plugs. The manufacturer is expected to warrant those items for their specified design life, such as 12,500 miles. If the maintenance instructions call for replacement of spark plugs at 12,500 miles, and the emission system fails to meet the standard at 5,000 miles, because of spark plug failure, the manufacturer would be required to replace the spark plugs at no charge to the customer in order to return the car to compliance. Failure of the spark plugs to work is conclusive evidence that the car was not "free from defects," as required by the 207(a) warranty.

But what happens if the spark plugs fail after 14,000 miles? The Committee agrees with EPA's interpretation as it applies to general parts: "failures occurring in a component after the expiration of the normal replacement interval for that component are not covered by the . . . warranty. Such components should be replaced by the car owner at approximately the specified interval." Failure to do such routine maintenance at any service establishment of the car owner's choosing, and at his or her expense, violates the requirement for proper maintenance, and thus voids the warranty.

The warranties to date have imposed no significant cost on the public, while providing an effective safeguard that the cars sold will actually meet the standard. The Bureau of Labor Statistics has reported that the existence of the Clean Air Act warranties have added \$1 to the cost of a new car.

Experience in California, Illinois and elsewhere with inspection and maintenance programs indicates that the great majority of cars which fail the emissions test only require a tuneup or other minor adjustments, at a cost of less than \$30. Since this involves components that receive routine maintenance they would not be covered by this warranty in any case and the owner would be free to get this work done wherever he wishes.

*Example: Arizona*

Percent of vehicles tested which fail.....	33
Percent of failures correctable with minor adjustments.....	84
Percent possible warranty.....	5.3

Occasionally a significant part of the emission control system like the air pump or the catalyst, does fail and the performance warranty is needed to protect the consumer who has paid for a car which is "certified" to meet emission standards for 50,000 miles.

Yet it is argued that the mere existence of the performance warranty, even with the new protections provided by the Committee bill, creates

a "psychological" impediment to the car owner's use of independent dealers. There is no evidence to this effect. Manufacturers routinely include instructions to the owner on the 50,000-mile warranty in the owners instruction book. One such warranty states:

If other than new genuine (manufacturer's name withheld) parts are used for required maintenance service replacements or for the repair of components affecting emission control, the owner should assure himself that such parts are warranted by their manufacturer to be equivalent to genuine (name withheld) parts in performance and durability.

That or similar language has been included in new car booklets for five years, without damaging impact on the aftermarket industry. The provisions of this bill would protect the car owner further, as the warranty directives from the manufacturers to the owner would have to indicate affirmatively that the owner may use whatever parts and service the owner wishes, without hampering the warranty.

But as added protection against any possible problems from the warranty, the Committee included a requirement that the Federal Trade Commission study the "impact on competition" of the Clean Air Act warranties, taking into account the objectives of the Act.

The FTC will be expected to hold hearings, and analyze the measures taken by the Environmental Protection Agency to prevent any potential adverse impact on competition from the warranty, including the effects of these amendments. The study will be conducted by the FTC's Bureau of Competition, in consultation with its Bureau of Consumer Affairs and the Environmental Protection Agency, and the Department of Justice. The study will also examine the impact of any extension in the warranty to cover the vehicle's actual useful life.

The results of the study are to be submitted to the Congress within 18 months after enactment.

## PRODUCTION LINE TEST (SEC. 26)

### SUMMARY

This provision amends section 206(b)(1) of existing law. The Administrator of the Environmental Protection Agency is required to establish, within 6 months after enactment of these amendments, a test procedure to implement a production line test of new light duty motor vehicles. Such production line test shall be implemented no later than model year 1977.

### DISCUSSION

Section 206(a) of the Clean Air Act requires that the Administrator test prototype motor vehicles prior to assembly line production to determine if the vehicle meets pollution control requirements. If a prototype achieves the standard over 50,000 miles, EPA issues a certificate of conformity, allowing full production of that model. This procedure has worked well.

Section 206(b)(1) authorizes the Administrator to "test" production cars to determine if they "do in fact conform with the regulations"

on certification. This procedure has not been implemented, although the agency has proposed what it terms a Selective Enforcement Audit to test production-line cars at random.

Information provided to the Committee indicates that significant numbers of cars, even some just off the assembly line, fail to meet the emission limitations. In cooperation with car owners, hundreds of cars are given lengthy tests each year by the Agency. These tests on cars built in model year 1974, and having 5,000 to 10,000 miles, showed that the average car exceeded the standards for hydrocarbons and carbon monoxide, and barely met the standard for nitrogen oxides. The average 1974 vehicles exceeded the carbon monoxide standard by 29 percent. Tests on 1973 vehicles exceeded the carbon monoxide standard by 61 percent. The 1972 vehicles exceeded the standard by 93 percent. These tests were run in 1974.

The wide range of performance from emission control systems appears to stem from several causes:

1. The apparent inability of the manufacturer to create systems of sufficient durability to conform to standards under conditions of actual use and abuse over the "useful life" of the vehicle;
2. Certification procedures which allow maintenance on test vehicles by highly skilled mechanics based on irregularities detected by trained drivers during the testing, all of which may bear little relation to actual maintenance patterns by consumers;
3. Lack of a production line test to check other than prototype cars in a statistically valid manner;
4. The apparent lack of sufficient quality control imposed on the emission-control items in the car, which may have little impact on the car's performance and saleability;
5. The fact that the Agency has not perfected a short in-use test that correlates with the test used in certifying the prototype to thus trigger the 207(b) warranty, which encourages improved quality control; and
6. Tampering with emission control systems.

Therefore, this section was included in the bill to begin to meet those problems, requiring that EPA "establish a test procedure" for production line testing within 6 months to deal with the problem in point 3 above. The bill does not mandate the form of such a test. That is left to the discretion of the Administrator. Because of the extensive work to date by the Agency in developing its proposed Selective Enforcement Audit, there is no reason to believe that such a production-line test cannot or should not be implemented for the 1977 model cars. This amendment should insure that the Agency moves expeditiously to implement that or any alternative proposal.

As early as possible these procedures should be expanded, or an alternative adopted, so that each and every car produced will be tested and its results recorded so that there will be a basis for comparison with results derived from in-use testing.

The certification process and production line test are inherently limited in their ability to assure proper emissions performance of production vehicles. It is clear that additional measures must be taken if the public is to be assured that cars on the road meet the performance requirements of the section 202 standard, and can be tested in a way to trigger the section 207(b) warranty.

Ambient air quality is determined by the actual emissions from vehicles. Little may be achieved by a system that produces a "clean" prototype, but then appears unable to follow along with production cars meeting prototype levels.

Some of these difficulties might be lessened if the mileage accumulated and the maintenance performed during certification were to be based on what a consumer would be expected to spot and check on his or her car, not what a trained driver identifies as a malfunction.

The extensive use of "running changes"—design modification approved without further testing—during a model year may also distort the results of certification. Numerous small changes in design subsequent to approval may have a cumulative effect that alters performance and emissions.

The Agency is expected to carefully review special maintenance practices during certification and running changes after certification and disallow any but the most limited use of these practices.

The proposal in the fiscal year 1977 budget request to reduce the number of EPA personnel assigned to the motor vehicle certification is wrong and a threat to the effectiveness of the current program. EPA's present funding is inadequate to carry out fully the vehicle certification program, much less monitor its implementation on the production line or in actual use. This program must be adequately funded. The Agency is expected by the Committee to report periodically on the adequacy of the personnel levels to carry out its responsibility under title II.

## PREEMPTION (SEC. 30)

### SUMMARY

This section amends section 209 of existing law. Any State in which a region or portion thereof is identified as not meeting a primary ambient air quality standard for a mobile source-related pollutant on the date of enactment of these amendments may adopt and enforce for model year 1979 the 1.0 gram per mile  $\text{NO}_x$  standard which is otherwise effective in 1980 for all light duty vehicles.

### DISCUSSION

The provision is a limited authority because it affects only the pollutant oxides of nitrogen. Emissions of carbon monoxide and hydrocarbons must meet the statutory standards everywhere in the 1979 model year. This provision is intended to make the 10 percent requirement more effective, as it could provide additional insulated markets for any company that sells less than 10 percent of their cars in California, but does not wish to sell cars to meet the 10 percent requirement nationally.

Smaller automobile companies, which are otherwise exempt from the 10 percent requirement, are not exempt from this provision. Those smaller companies are not exempted, of course, from California requirements.

The requirement for sale of statutory-standard cars in a State in 1979 is a "reasonable transportation control measure" under the section 110 amendments on transportation controls.

This provision was initially adopted to cover both the 1978 and 1979 model years. The Committee subsequently modified this preemption so that it applies only in the model year 1979. It does not affect in any way the California preemption, which has been in the Act since 1967.

### SULFUR EMISSIONS (SEC. 31)

#### SUMMARY

This section amends section 211 of existing law. The Administrator shall conduct a 1 year study of the emissions of sulfur compounds from motor vehicles and aircraft. Health and welfare effects of such emissions are to be reviewed and alternative control strategies are to be analyzed. Such study shall be reported to Congress by July 1, 1977.

#### DISCUSSION

This provision supplements the existing authority of the Administrator under section 211 to regulate and, if necessary, prohibit the manufacture or offering for sale of any fuel or fuel additive whose emission products will endanger the public health or welfare or impair the performance of an emission control device.

Sulfate emissions from catalyst-equipped cars were detected more than three years ago, prior to the introduction of 1975 model automobiles equipped with oxidation catalysts. In November, 1973 the Administrator appeared before the Committee to report his judgment that the preliminary data available did not warrant a deferral of the 1975 auto emission standards which the auto industry would achieve with oxidation catalysts, or a prohibition on the use of such technology. At that time, the Administrator committed the Agency to an accelerated program to develop better sulfate measurement techniques and more accurate estimates of the public health impacts of sulfur compounds.

The Committee has mandated this one year study to ensure that the accelerated standard-setting process to which the Administrator committed the Agency does in fact continue. The Committee is concerned that any further delay in the promulgation of a sulfate emission standard, if needed, could have health implications which will limit technological options available for the achievement of the statutory auto emissions standards. To avoid such an effect, the Committee expects a comprehensive study on the health and welfare effects of mobile source-related sulfur emissions and all feasible technological alternatives for their control at the source, including aircraft, whose emissions may be a significant addition to sulfate concentrations from catalyst-equipped motor vehicles. Such alternatives shall include, but not be limited to, desulfurization of fuels, short-term allocation of low sulfur crude oil, and any technological device or engine system which may reduce or eliminate the emission of sulfur compounds from motor vehicles and aircraft. Although the results of the study should be reflected in any sulfate emission standard which is promulgated, it is not intended that this study requirement affect the date of promulgation of a standard if such standard is deemed necessary.

## RAILROAD LOCOMOTIVE EMISSION STANDARDS (SEC. 32)

## SUMMARY

This section adds a new part C to title II of existing law. Within 90 days after enactment of the Clean Air Act Amendments, the Administrator shall commence a study and investigation of the air quality impacts of emissions from railroad locomotives, locomotive engines and secondary power sources on rolling stock, and of the technological feasibility of controlling such emissions. Within 180 days later, the Administrator shall publish such study and propose emission standards for any air pollutant from such sources reflecting the degree of emission reduction achievable through the application of the best available technology taking into account the cost of compliance.

Within 90 days of proposal and after public hearings, the regulations shall be promulgated, to become effective when the Administrator determines in consultation with the Secretary of the Department of Transportation that the requisite technology is available for application, taking into account the cost of compliance within such period.

After such regulations become effective, the Federal emission standards are preemptive.

## DISCUSSION

During consideration of the Clean Air Act of 1970, the Senate included emission standards for railroads. However, that provision was dropped in the conference.

The industry requested that the Committee consider Federal regulation of air pollutants emitted from railroad locomotives, locomotive engines, and secondary power sources on railroad rolling stock.

The class I railroads of the Nation operate more than 28,000 diesel locomotives over approximately 200,000 miles of railroad lines in the 48 contiguous States. In the course of operations, railroad locomotives and rolling stock are constantly moving back and forth across State lines and in and out of countless political subdivisions. While some of the railroad locomotives may be devoted exclusively to either road haul operations or switching operations, most of them might be found in switching operations on one day and in line haul service the next day.

According to the industry, the increased use of interrailroad power pools and run-through trains makes it impossible to predict or identify all of the jurisdictions in which a locomotive may operate in a given period. The locomotives of a given railroad may enter States in which the owning railroad does not operate.

The railroads feel strongly that as these locomotives pass from State to State, and county to county and from one city to another, they should be subject to a common standard and that there should be a consistent rationale in the formulation and implementation of those standards. Today, of course, there is no common rationale behind the varying standards established by a multitude of jurisdictions.

It has been suggested that the railroads could avoid the problem posed by the multiplicity of regulations by simply adjusting the locomotives so that they would comply with the strictest standards. The railroads indicate that this is not practical, because of the extremely high cost that would be involved. Not all State and local governments are required to consider the technological feasibility of

complying with their standards or the total economic impact their regulations may have on the railroad system.

While the railroad industry is concerned with what they consider to be unduly restrictive standards, its greater concern is with their current inability to address their problems to a single enforcement agency which employs a common standard based on a consistent policy.

Therefore, they are encouraging the enactment of preemptive emission control legislation. This provision requires that a standard based on reasonable technology be set that then preempts local regulations.

This new part preempts States or political subdivisions thereof from adopting or enforcing emission standards for railroads only after the effective date of regulations promulgated under this part. A State or political subdivision thereof may, however, adopt and enforce an identical standard. This complementary enforcement by State and local governments is essential, since Federal enforcement resources are likely to be limited.

To preempt State or local regulation, there must be effective Federal regulation. In implementing section 17 of the Noise Control Act, the Environmental Protection Agency has attempted to preempt State and local regulation of noise emissions from railroads by simply describing noise from various operations without any control of the noise emissions from such operations. This is an unacceptable exercise of the Environmental Protection Agency's regulatory authority. Under this new part of the Clean Air Act, the Committee does not intend that preemption be based on anything except effective regulation and actual control of railroad locomotive emissions.

### TITLE III

#### DEFINITIONS (SEC. 33)

##### SUMMARY

This section amends section 302 of existing law. "Emission limitation" is defined as permanent controls which result in continuous limit of the emissions from a source, including a detailed schedule and timetable of compliance.

"Schedule and timetable of compliance" is defined to mean a schedule of enforceable actions in an implementation plan which lead to compliance with the specified emission limitation or other standard in the plan.

"Major emitting facility" is defined as any stationary source which emits or can emit 100 tons or more per year of any air pollutant, for the purposes of all provisions under the Clean Air Act except the provisions for the prevention of significant deterioration (section 110(g)).

For the purposes of section 110(g), a major emitting facility is any stationary source which emits, or can emit, 100 tons or more per year of any pollutant and which falls within one of the categories specified by this statute or subsequently identified by the Administrator to be a significant potential source of air pollution.

"Baseline air quality concentration" is defined as the level of ambient air quality which exists as of the date of the first application for a permit in the area under the nondeterioration provisions.

## DISCUSSION

## EMISSION LIMITATION

The 1970 Clean Air Amendments included a requirement that State implementation plans impose "emission limitations." This term has been the subject of controversy, litigation, and dispute. This bill includes a definition of the phrase "emission limitation" to clarify the Committee's view that the only acceptable basic strategy is one based on continuous emissions control. Intermittent controls or dispersion techniques are unacceptable as a substitute for continuous control of pollutants under this Act.

This clarification of existing law is grounded in two factors. First, there is increasing evidence of the long range transport of pollutants that become sulfates, acid rain, and other phenomenon affecting human health, vegetation, and soils, but leaving no definable plume that is traceable back to the source.

In a report for the Committee, the National Academies of Science and Engineering found that dispersion measures may exacerbate the formation in the atmosphere of acid sulfates and nitrates from the sulfur and nitrogen oxides emitted from fuel-burning sources. These derivative pollutants are thought to be more toxic forms than the oxides of sulfur and nitrogen that are actually emitted at the smoke-stack and are measured in the vicinity of the source.

More significant is the fact that intermittent control strategies are, as a general rule, unenforceable by air pollution control agencies. Such strategies require elaborate monitoring and forecasting capability. Implementation relies on the polluter's ability to predict weather conditions and willingness to curtail production in response to those predictions. In addition, they can cause unacceptable disruptions in production and employment. At the same time few air pollution control agencies have the resources to police these strategies to assure that a polluter does in fact curtail production on a timely basis.

On the other hand, continuous emission reduction measures are available, they are reliable, and they are economically justified. Available measures for continuous emission reduction include use of fuels that are low in sulfur or ash, and techniques such as desulfurization of fuels, flue-gas cleaning, and more effective combustion engineering. The Committee notes that the use of these measures will assure the greater availability of domestic coal as a boiler fuel, thus enhancing the Nation's goal of energy independence. The choices among such measures or the combination of measures to achieve the level of emission control set by the air pollution control agency rests with the owner of the source. The use of intermittent controls is appropriately reserved for air pollution emergencies.

It is recognized that the source controls may not be available to achieve the full reduction required of a particular source under particular circumstances. In such case, supplementary programs can and should be developed. But this flexibility occurs only after imposition of the continuous emission limitation.

EPA will be expected to review existing State implementation plans and require revision in any that depend upon dispersion techniques rather than continuous controls. Where necessary State implementation plans will have to be modified.

Lack of information has plagued the air pollution program since its inception, and is an excellent argument for not relying on ambient air quality standards as the mechanism for enforcing the Clean Air Act. The lack of data, the lack of State personnel resources, and the lack of the expensive monitoring equipment required to ascertain the quality of urban and rural areas suggests the inappropriateness of a policy which uses air quality standards as the enforcement mechanism.

An emission limitation established in an implementation plan must include a detailed schedule and timetable for compliance with the specific continuous quantitative control requirements of that emission limitation. The purpose of this is not to incorporate the more general definition of "schedule and timetable for compliance" into the definition of "emission limitation." Rather, this is intended to assure that the actual limitation on emissions and the necessary interim steps leading to its attainment, are enforceable at definite times.

#### SCHEDULE AND TIMETABLE FOR COMPLIANCE

The definition of "schedule and timetable for compliance" contained in these amendments is based on the definition of the term "schedule for compliance" under the Federal Water Pollution Control Act. The phrase, however, has appeared in the Clean Air Act since the 1970 Amendments.

The purpose for supplying a definition in these amendments is not to change the interpretation of what constitutes a schedule and timetable for compliance under section 110. The definition is added primarily to provide symmetry, since a clarified definition of "emission limitation," another phrase which has appeared in the Clean Air Act since 1970, is added by these amendments. Also, the requirement for schedules and timetables for compliance is more extensively used in new provisions, particularly the amendments to section 113.

Schedules and timetables for compliance must be established for a variety of requirements. These include emission limitations, prohibitions, hazardous emission standards, opacity limitations, transportation control plan elements, and the myriad of specific enforcement requirements which make up a total implementation plan for the attainment and maintenance of an ambient air quality standard.

Specific schedules and timetables for compliance must be established for all such control requirements to assure that effective enforcement is not postponed until the final date by which such requirement is to be achieved. A clear set of specified interim steps leading to final compliance must be included in the implementation plan, and each such interim step must be enforceable and capable of factual determination of compliance.

#### MAJOR EMITTING FACILITIES

The bill establishes a definition in the law for "major emitting facilities," a definition with two parts. For the general purposes of the bill, such as those provisions dealing with delayed compliance, a major emitting facility is defined as any source with an annual potential to emit 100 tons of any pollutant. This is a standard in general use by EPA and by the States to define major sources of pollution. It is a reasonable and rational point of division.

The legislation also creates a mechanism to guard against significant deterioration of air quality, a procedure that must include an effective review-and-permit process. Such a process is reasonable and necessary for very large sources, such as new electrical generating plants or new steel mills. But the procedure would prove costly and potentially unreasonable if imposed on construction of storage facilities for a small gasoline jobber or on the construction of a new heating plant at a junior college, each of which may have the potential to emit 100 tons of pollution annually.

Rather than utilize the broad definition in delineating major facilities in no-significant-deterioration areas, the Committee approved a more restrictive list of specific industrial categories to be included in the no-significant-deterioration review, provided that the plant also has the potential of emitting at least 100 tons of any pollutant yearly.

The list, growing out of the EPA list of no-significant-deterioration regulations, is limited to the following categories: fossil-fuel fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (thermal dryers), kraft pulp mills, Portland Cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production facilities, chemical process plants, fossil-fuel boilers of more than 250 million British thermal units per hour heat input, petroleum storage and transfer facilities with a capacity exceeding 300,000 barrels, taconite ore processing facilities, glass fiber processing plants, and charcoal production facilities.

The Administrator is given full flexibility to include additional categories where he believes it necessary to implement effectively the intent of the no-significant-deterioration provision.

The Environmental Protection Agency has a much more extensive list of categories of sources of pollution than the list contained in the bill. The Agency is directed to examine that list for additional sources which will have significant total national emissions or emissions which may result in significant local problems. Any such categories should be added to those identified in the bill.

The Committee did not include asphalt-batch plants in the list, recognizing that many such plants are mobile and can be transported from site to site for construction work. This would appear to create a difficult burden for review and permitting. But because the Committee notes that a typical 150-ton-a-day asphalt plant has the potential to emit 1,700 tons of pollution yearly, the Administrator should examine this category carefully to determine if at least those asphalt plants that are stationary should be reasonably included as major emitting facilities.

#### BASELINE AIR QUALITY CONCENTRATION

The increment available in clean air areas under the section 110(g) requirements for the prevention of significant deterioration is to be

added to existing baseline concentrations. The baseline is defined as the concentrations which exist at the time the first applicant for a permit in an area files that application. If there are sources in the area which have commenced construction after January 6, 1975, the emissions from those sources (even if such source has completed construction and is presently operating or emitting pollutants) shall not be included in the baseline, but deducted from the increments applicable to the area. If the source has commenced construction prior to January 6, 1975, then the emissions shall be included in the baseline, even if the source has not completed construction and is not in operation. January 6, 1975, was the date when EPA's regulations for the prevention of significant deterioration became effective.

Under this definition it is possible for non-major emitting sources to be constructed in the area after the date of enactment without having their emissions affect the ability of major emitters to use the increment available.

States should avoid allowing emissions from non-major emitters to use up the safety margin between the increment and the ambient air quality standards. In addition, care should be taken to assure that the emissions from both non-major emitting sources and major emitting facilities do not in total jeopardize the applicable ambient air quality standard. States and the Environmental Protection Agency have a positive responsibility to assure that such ambient air quality standards are maintained, and applicable increments are not exceeded.

Under the EPA regulations, any source which commenced construction prior to January 6, 1975, would have its emissions calculated in the baseline; this aspect of the baseline definition is the same as that provided in the Committee reported bill. Under the reported bill, however, the time at which the baseline is established for different areas will depend upon the timing of the first application of a major emitting facility.

The purpose is to use actual air quality data to establish the baseline. Where sufficient actual data are not available, the State may require the applicant to perform whatever monitoring the State believes is necessary to provide that information. This may involve modeling for 12 months or more to establish an annual average.

In calculating the baseline air quality concentration, one caveat is in order. This concerns background particulates levels in rural States caused by windblown dust. Because of the impreciseness inherent in the total suspended particulates standard, background dust in rural States can lead to levels in excess of the particulate standards. Fortunately, the logical dilemma posed by the shortcomings of the present particulates standards have been overcome by administrative good sense. The States and EPA have recognized this problem of rural background particulates and discounted its effects where it is due to transitory, natural causes such as wind, and involves particulates not generally of the substances and respirable sizes thought to affect public health. In calculating baseline levels for the purposes of the non-deterioration requirements, the Committee would expect that the same degree of administrative good sense would continue. This problem, however, should serve as a spur to EPA to expedite its ongoing efforts to make the particulate standard a more precise air quality tool.

## CITIZEN SUITS (SEC. 34)

## SUMMARY

Section 304 of the Clean Air Act is amended to allow a citizen to bring suit to prevent construction of a major emitting facility without a permit in compliance with section 110(g), the nondeterioration provisions of the Act, or to enforce against any violation of a condition of such a permit or other requirements of the Act such as those of sections 110(a)(4) and 110(g).

## DISCUSSION

The purpose of this amendment is to provide an opportunity for citizens to enforce the requirements of the Act for preconstruction review and permits to build new major emitting facilities, and to enforce the conditions of those permits against alleged violations. In order to challenge the legality of a permit which a State has actually issued, or proposes to issue, under section 110(g), however, a citizen must seek administrative remedies under the State permit consideration process, or judicial review of the permit in State court.

Where Federal lands or Federal officials are involved, it may also be possible to seek judicial review in Federal court. The Committee does not intend by these amendments to section 304 to provide another means to a citizen to challenge the legality or validity of a State-granted permit under section 110(g).

## COST OF LITIGATION (SEC. 35)

## SUMMARY

This section amends section 307 of existing law. In any suit in which the United States is a party, any prevailing party other than the United States shall recover all reasonable costs of its participation in such proceeding. Where such party prevails in part, the court may award reasonable costs.

## DISCUSSION

This section intends to insure balance in the legal process in cases under the Clean Air Act when the United States is the plaintiff or defendant; to prevent harassment of innocent parties; and reimburse citizens who seek to enforce the law. The section requires that "any party other than the United States" be compensated for its costs of litigation when that other party "prevails" in the action. The costs for which the outside party will be compensated include attorney's fees, expert witness fees, and the costs of studies, analyses, tests, and engineering reports necessary in the litigation.

This language covers instances when the Federal government goes to court to enforce against a pollution source, when a pollution source goes to court to oppose a Federal action, and those instances in which a private citizen goes to court to require that the Federal Government, under the Citizen Suit provisions of the Clean Air Act, act against a pollution source or to enforce, requirements of the Act.

This section leaves to the discretion of the court the amount of payments, if any, to the private party when that party is partially successful.

### EMPLOYEE PROTECTION (SEC. 36)

#### SUMMARY

This section adds a new section 314 to existing law. This section offers protection to employees who believe they have been fired or discriminated against as a result of the fact that they have testified or brought suit under this Act. The employee may apply to the Secretary of Labor for review of his case. The Secretary of Labor can issue an order for the employee to be rehired, or otherwise compensated, if the employee's case is justified. The section does not apply to an employee who acts outside the direction of his employer.

At the request of an employee, the Administrator shall investigate threatened plant closure or reductions in employment allegedly resulting from any Clean Air Act requirement, including public hearings on the record. Such hearings shall be the basis for findings of fact and recommendations by the Administrator.

#### DISCUSSION

This amendment is substantially identical to a provision adopted in 1972 amending the Federal Water Pollution Control Act. The legislative history of that Act stated:

Section 507 of the bill is patterned after the National Labor Management Act and a similar provision in Public Law 91-173 relating to the health and safety of the Nation's coal miners. Under this section employees and union officials could help assure that employers do not contribute to the degradation of our environment.

Any worker who is called upon to testify or who gives information with respect to an alleged violation of a pollution control law by his employer or who files or institutes any proceeding to enforce a pollution control law against an employer may be subject to discrimination.

The section would prohibit any firing or discrimination and would provide an administrative procedure under which the employee or his representative could seek redress for any violation of this prohibition. The Secretary of Labor would investigate such charges and issue findings and a decision which would be subject to judicial review. If the Secretary should find a violation, he would issue orders to abate it, including, where appropriate, the rehiring of the employee to his former position with back pay. Also, the person committing the violation could be assessed the costs incurred by the employee to obtain redress.

This provision would safeguard the rights of employees, but it should not encourage employees to frivolously allege violations since the employee would have to pay the cost of the proceedings unless the violation is proved.

In order to avoid abuse of the protection afforded under

this section the Committee has added a provision which would deny its applicability to any employee who, without direction from his employer, deliberately violates or wilfully contributed to a violation of any standard, requirement or regulation under the Act.

In addition, it contains a provision adopted by the Conferees of the 1972 Water Pollution Control Act which authorizes the Administrator to investigate allegations of job loss. The Statement of Managers said:

Section 507 is essentially the same as the provisions of the Senate bill with the addition of a new subsection (e) which requires the Administrator to investigate threatened plant closures or reductions in employment allegedly resulting from any effluent limitation or order under the Act. Such investigation shall be conducted on request of an employee or a representative of an employee. At public hearings the employer is required to present information relating to the alleged discharge, layoff, or discrimination. This hearing is to be on the record and on the basis of it the Administrator is to make findings of fact and recommendations. These are to be available to the public. This provision is not to be construed to require or authorize the Administrator to modify or withdraw an effluent limitation or order.

To the Committee's knowledge this provision has only been used once. In that instance there was an allegation by owners of pulp and paper plants in the State of Alaska that compliance with applicable effluent limitations would cause economic disruption, layoffs and plant closure. The Administrator of the Environmental Protection Agency utilized this provision as a means of offering the employers the opportunity to demonstrate to EPA the validity of the allegation. A portion of a letter from the Administrator of the Environmental Protection Agency to Senator Ted Stevens of Alaska, referencing that offer, stated:

I have decided to allow the industry an opportunity to present greater detailed economic data pertaining to potential plant closures. I have asked Clifford Smith, Regional Administrator in Seattle, to offer the opportunity for a hearing in the near future under the provision of section 507(e) of the Federal Water Pollution Control Act. Section 507(c) provides for the Administrator to conduct evaluations of potential loss or shift of employment that may result from issuing any effluent limitation under the Act, and provides for a hearing procedure for presenting pertinent information.

While this provision is primarily intended to provide employees with relief where there is an allegation of disruption associated with air pollution control requirement, the Committee believes that the Administrator is well within his authority in using the provision as proposed in the Alaska case.

And the Committee supports the Administrator's effort to find all the facts through the use of this provision. The Committee would expect that the Administrator would follow this precedent and examine in detail allegations such as those which have accompanied

enforcement orders in Gary, Indiana and other areas in order that not only will workers have adequate information on the implications of an environmental requirement but the public can also understand the potential impact, real or alleged.

## NATIONAL AIR QUALITY COMMISSION (SEC. 37)

### SUMMARY

This section adds a new section 315 to existing law. A National Commission on Air Quality composed of congressional and public members is set up to study and report to Congress within 3 years on the adequacy of the clean air programs to protect the public health and welfare, and the implications of implementing such programs. A report and recommendation on the auto emissions standard for NO<sub>x</sub> is required by March 1977.

### DISCUSSION

The Clean Air Act authorizes a series of control strategies designed to achieve and maintain ambient air quality which will protect public health and welfare and prevent the deterioration of air quality in clean air regions. The Act specifies that emission limits on new and existing sources of pollution coupled with schedules and timetables of compliance are to be the enforcement mechanism.

The Act establishes national emission standards for mobile sources of pollution and authorizes State and local control of stationary sources within national guidelines. The Act also establishes deadlines for achievement of various objectives.

The Act requires the Environmental Protection Agency and State and local pollution control agencies to perform specific responsibilities including fixing emission limits, monitoring emissions and ambient air, enforcing against violators and, where necessary, developing land use and transportation controls.

The strategies in the Act evolved over a 12 year period and reflect the best judgment of the Congress in terms of protecting and enhancing air quality. The National Commission on Air Quality (NAQC) is expected to examine the full range of technical questions associated with implementation of the Act and the economic, environmental, and social implications of achieving or not achieving its purpose.

The Commission is not created to second guess those purposes but in any case where the examination suggests limitations associated with the applicable strategy, the report is expected to specifically identify the alternative mechanisms for achieving the stated goal of protection of health and welfare and preservation of clean air and the implications of those alternatives.

While the studies itemized in the bill are general, it is the intent of the Committee that the NAQC identify specific topics and address these in the report to Congress. Specific topics cover the areas of health effects, technology assessment, the energy and economic impacts of the legislation, and the adequacy of the current national research and development program as discussed in the following paragraphs. For each individual subject area, the NAQC should advise the Congress on the availability and adequacy of existing

data as well as the need for new studies. Recommendations for new studies should be accompanied with suggestions on where these studies can best be performed, required study time frames, and estimated study costs.

The NAQC should consider whether existing data indicate there is need for control of air pollutants currently not regulated. The phrase "not regulated" can be interpreted in a wide variety of ways. For example, a total particulate standard may exist but the question remains as to whether individual particulates need to be regulated independently, whether particle size should be included in the definition of particulates as pollutants, and whether natural particulates, stationary source particulates, and mobile source particulates all contribute to a single ambient particulate level for the purpose of an ambient air quality standard. In cases where existing data are not available to support ambient standards, the NAQC should identify those pollutants which are currently being emitted or have the potential to be emitted from existing sources and the available control options, both technical and administrative. The NAQC should identify areas where effects data for these pollutants is most needed.

The NAQC should address the adequacy of research and development which is being carried out by Federal, State and local government agencies as well as nongovernmental entities (private industry and universities) in order to support the protection and enhancement of air quality. Research areas include health effects, welfare effects, systems for air quality measurement including the quality of ambient air monitoring instrumentation, the importance of instrument location, and the adequacy of the monitoring network, development and assessment of new emission control technologies for application to mobile and stationary sources, the effectiveness of pollution control strategies including transportation control strategies, the development of adequate air quality modeling techniques, and the accumulation of the necessary data to support an accurate assessment of current and projected air quality, including meteorological data, source emission factors, population data, vehicle mix and usage data, and source location data. The NAQC should address the uncertainty involved in the current information base and set priorities for additional research efforts.

The Committee has determined that there should be a national policy requiring protection of air quality in clean air areas. A number of proposals were advanced as to how best to achieve this policy. The Committee has chosen an approach which it believes is feasible and flexible.

The Committee believes that given the current state of the art of diffusion modeling, the wide differences of opinion regarding the assumptions used in this modeling process, the disagreements between industry, environmentalists, and government agencies regarding implications of the specific increments required under this provision, and the predictions about the economic impact of these requirements, it would be useful to have an ongoing overview of this process. Hopefully studies done by the Commission can fill any information gap and in so doing provide Congress with an ongoing analysis of the implications of this policy.

The Committee was also concerned with the need to encourage the development of improved pollution control equipment and cleaner processes. The Act provides several technology forcing mechanisms. There may be other alternatives which would encourage technological change and innovation. The Committee expects that the Commission studies will shed light on approaches that are available or can be made available.

The Clean Air Act establishes a set of rights, responsibilities, and obligations comprising an intricate web of intergovernmental relationships. This complex setting should produce an institutional network which is capable of pursuing and accomplishing the national goal of clean, healthy air. The Committee recognizes that an examination of the technological, environmental, economic, and social impacts of the Clean Air Act will prove less than satisfactory without a concurrent examination of the institutional structure and response to the goals and requirements of this legislation. The Commission hopefully through its examination of these relationships will be able to specify what if any change is needed to make the goals of this Act more expeditiously and practicably achievable.

In some instances the present mechanisms for achieving compliance with the requirements of the Clean Air Act have worked well, but have been inadequate in others. Some of the procedures in the Act have been utilized as a tool for delay. The Congress in passing this legislation intended that its requirements be met as quickly as possible and without unnecessary red tape or delay to those regulated. Thus it is hoped that the Commission will examine the advantages and disadvantages of existing and proposed methods of achieving compliance with air quality standards and emission limits and plans, including administrative and court imposed criminal and civil penalties, emission taxes, taxes and other economic incentives, grants and loans, public pressure, research development and technical assistance.

In hearings and discussions involving representatives of the public, industry, and government, the Committee received many differing views regarding the stringency of the statutory requirements on  $\text{NO}_x$  mobile sources. These differences ranged over a wide spectrum of topics from health effects of  $\text{NO}_x$  to the economic repercussions that the 0.4 gram per vehicle mile standard could cause. It is intended that the Commission examine the questions regarding the  $\text{NO}_x$  standard with emphasis on the research objectives from all viewpoints and report back with the results of such study no later than March 1, 1977, in order that Congress may have this information in a timely fashion.

The composition of the Commission is somewhat different from that of the National Commission on Water Quality. The chairman and ranking minority member of the Senate Public Works Committee and the House Interstate and Foreign Commerce Committee will be non-voting ex officio members.

It is the intent of the Committee that the President select the eleven non-congressional commission members from the scientific and academic communities and the general public. The scientific members should be recognized as experts in the field of air pollution, in areas such as health effects, technology assessment, air quality modeling,

emission measurement techniques, and public policy assessment. It is hoped that one of the nonscientific members will reflect environmental and industrial viewpoints and will be familiar with the air pollution problems and policy. To help in selection of such persons, knowledgeable Federal agencies, environmental, scientific and industrial groups are urged to suggest qualified persons to the President within 60 days after enactment of this legislation. This procedure, it is hoped, will increase the amount of valuable background information and divergencies of viewpoints represented by the membership, the numbers of alternatives considered, and finally the public acceptance of the report presented to the Commission.

### AUTHORIZATIONS (SEC. 38)

#### SUMMARY

This section amends section 316 of existing law, redesignated as section 318. There are authorized, other than for sections 103(f)(3) and (d), 104, 110(h)(8), 150-159, 212, 315, and 403, \$300,000,000 for fiscal year 1976, \$75,000,000 for the transition period, and \$200,000,000 for fiscal year 1977 and fiscal year 1978. The new transportation control planning section has a \$75,000,000 authorization to be available until expended.

#### DISCUSSION

The Committee received the following table from the Environmental Protection Agency estimating the resources needed by the Agency to implement the Clean Air Act with the new responsibilities contained in the reported bill:

#### RESOURCE ESTIMATES FOR IMPLEMENTING THE PROVISIONS OF THE CLEAN AIR ACT AMENDMENTS OF 1976

(Dollar amounts in thousands)

Program area/section	Fiscal year—					
	1977		1978		1979	
	Positions	Amount	Positions	Amount	Positions	Amount
I. State/local government support:						
A. Control agency support (sec. 105).....		\$30, 000		\$35, 000		\$35, 000
B. Planning organizations (sec. 110(h)(8)(A)).....		35, 000		40, 000		
II. Information to be provided to States/localities for control of transportation-related pollutants (sec. 108(f)).....	4	1, 250	4	100		
III. Reports to Congress (sec. 110(g)(8), sec. 40).....		500				
IV. Ozone protection (sec. 150 through 159) <sup>1</sup> .....	30	14, 000	35	47, 000	35	47, 000
V. Motor vehicles control (title II).....	40	5, 000	40	5, 000	40	5, 000
VI. Locomotives and other railroad equipment control (sec. 235).....	5	1, 000	5	200	5	200
VII. National Commission on Air Quality (sec. 315).....		17, 000				
Subtotal, new Legislation.....	79	103, 750	84	127, 300	80	87, 200
Total, existing legislation <sup>2</sup> .....	2, 129	173, 000	2, 100	173, 000	2, 000	173, 000
Total, Clean Air Act.....	2, 208	276, 750	2, 184	300, 300	2, 080	260, 200

<sup>1</sup> Includes research as well as regulatory functions.

<sup>2</sup> Based on optimum program submitted to the Congress. Includes \$52,200,000 for sec. 104; the remaining \$120,500 relates to sec. 316.

The Agency provided the following explanation of the table above:

The attached table provides the estimates of the costs of implementation of the amendments to the Clean Air Act as contained in the Committee Print dated February 23, 1976. It should be noted that the estimates assume a full level of resources for the implementation of the provisions of the current legislation, with separate estimates (additive to the current legislation estimate) provided for each area in the proposed amendments that has a resource impact on EPA.

The estimate of resources required to supplement resources at the States and localities is not specifically identified with provisions of the legislation since many of the provisions imply the existence of fully funded and staffed State and local air pollution control agencies. Therefore, the estimate for the resources required to support State and local control agencies is given as the level of Federal funds required to provide the full Federal share (assuming traditional State/Federal grant matching ratios) of the total resources required by the control agencies for implementing the Clean Air Act. The estimate does not include funds for the implementation of specific control measures, such as motor vehicle inspection and maintenance programs. Grants to organizations of local elected officials for purposes of developing control plans are provided for in the estimate.

It should also be noted that the estimates only account for the resources required by EPA. No estimate is provided for the execution of the responsibilities of other Federal agencies in relation to certain provisions of the amendments, e.g., railroad emission standards enforcement.

## NO<sub>x</sub> EMISSIONS PENALTY STUDY (SEC. 40)

### SUMMARY

The Administrator shall submit to the Congress within 1 year a report on the possible creation of a system of penalties on NO<sub>x</sub> emissions from new and/or existing major emitting facilities, to encourage the development of more effective control technologies. Such proposed system would terminate when adequate control technology is available to be installed on such sources.

### DISCUSSION

This section directs the Administrator of the Environmental Protection Agency to study and report to the Congress within a year on the possible use of financial penalties as a way to encourage the development and use of more effective emissions control technologies by the major stationary sources of oxides of nitrogen.

The control of emissions of oxides of nitrogen is essential to the attainment of national air quality goals and the protection of the public health. Emissions standards for motor vehicles will dramatically

reduce the  $\text{NO}_x$  emissions from future motor vehicles, thus reducing the impact of vehicles on ambient concentrations of oxides of nitrogen. It is difficult to justify stringent nitrogen oxide controls on moving sources, when more than half of the nitrogen oxides come from stationary sources and those sources remain relatively uncontrolled.

Health effects are known to exist from nitrogen oxides, and there is a possibility that nitrogen oxide emissions may be contributing to complicated transformation of chemicals in the atmosphere that lead to possible carcinogenic pollutants. Of the various projections for the pollutants controlled pursuant to the Clean Air Act, emissions of oxides of nitrogen show the most significant increase into the latter years of this century. By various projections, annual  $\text{NO}_x$  emissions by 1990 will exceed current levels by 30 to 100 percent.

The National Academy of Sciences "conservatively" estimates that there will be a 36 percent increase in annual  $\text{NO}_x$  emissions by 1990, assuming a 0.4 gram per mile  $\text{NO}_x$  emission standard for light duty vehicles, with most new electric power generation coming from nuclear power. The Environmental Protection Agency, assuming a 2.0 grams per mile  $\text{NO}_x$  standard for cars and control of new stationary sources at the level of current New Source Performance Standards, projects annual  $\text{NO}_x$  emissions by 1990 at double the 1975 levels.

These increases will occur because not much is known and less is being done about controlling  $\text{NO}_x$  from stationary sources. No new source performance standards exist affecting  $\text{NO}_x$  produced by petroleum refineries, asphalt plants, lead smelters, electric and basic oxygen steel furnaces, and municipal incinerators.

More than half the  $\text{NO}_x$  in the United States comes from fuel combustion at stationary sources. The present new source standard for  $\text{NO}_x$  from coal-fired boilers allows  $3\frac{1}{2}$  times the emissions projected by the National Academy of Sciences as the potential for boiler design. There appears to be little research or momentum toward that potential.

Techniques have been identified by EPA for a number of years, and have been summarized in "Overview of the Environmental Protection Agency's  $\text{NO}_x$  Control Technology for Stationary Combustion Sources." This assessment indicates that reducing the amount of excess air available during firing increases efficiency as well as reduces nitrogen oxides by up to 27 percent. Water injection produces a small fuel penalty, but reduces nitrogen oxides by 60 percent. Other techniques such as flue gas recirculation produce no change in efficiency and reduce nitrogen oxides by 27 percent to 57 percent.

There is unlikely to be any significant advancement toward the control of  $\text{NO}_x$  from stationary sources without some new, outside stimulus. This holds particular importance since the bill relaxes the statutory control level for mobile sources of  $\text{NO}_x$ , increasing allowable emissions by 150 percent.

The most logical way to control  $\text{NO}_x$  will be to stimulate technology for improved designs at those sources that will be coming on line over the next few years. In an effort to implement this approach, the bill requires that the Environmental Protection Agency study the potential for  $\text{NO}_x$  controls, within the context of a system of possible penalties or fees that would be geared to induce the development of more effective control technologies. This artificial, marketplace incentive could provide the needed stimulus.

In studying this approach, the Administrator should consider recommending a system that is designed to terminate for each category of sources when EPA is satisfied that adequate technology will be installed on all such major sources, either new or existing. In analyzing the issue, the Administrator should seek to determine what level of penalty would be effective in stimulating technological improvements, without producing an economic hardship.

For example, the burning of a ton of coal is estimated to produce about 16 pounds of  $\text{NO}_x$ . The emissions penalty might be designed to reduce that  $\text{NO}_x$  by 75 percent, to the level calculated by the National Academy of Sciences as the "potential" for control. If a penalty of 1 cent a pound on  $\text{NO}_x$  were established, this would add a cost of 16 cents to the cost of burning a ton of coal, or about 1 percent of the cost of a ton of coal, using prices charged on present, long-term contracts.

The Administrator is free to consider alternative fee schedules for different categories, as well as different levels of ultimate control for different categories, until effective control can be assured.

Recognizing that an effective emissions penalty system must rely heavily on the timely compilation of the appropriate data by emitting sources, this section also directs the Administrator to study and recommend a system for collecting adequate records from the emitting source. These records would then be made available to the Administrator for use in determining the appropriate level of any emissions penalty that might be incurred by the source.

The Administrator or his authorized representative may gather such information as is needed in order to properly conduct the study.

#### SAVINGS PROVISION (SEC. 41)

##### SUMMARY

Suits, proceedings, regulations, orders, and other items relating to implementation of the Clean Air Act otherwise not affected by provisions of this Act remain in effect.

## ROLLCALL VOTES DURING COMMITTEE CONSIDERATION

During the Committee's consideration of this bill, 66 rollcall votes were taken (including those which were taken during consideration by the Subcommittee on Environmental Pollution). Each of those votes was publicly announced during the open meetings of the Committee for marking up this legislation. The tabulation of those votes is available in the Committee's files.

Pursuant to section 133 of the Legislative Reorganization Act of 1970 and the Rules of the Committee on Public Works, the vote of the Committee to report the bill is announced here. The Committee ordered reported the Clean Air Amendments of 1976 on February 5, 1976, by a vote of 12 to 1, with Senators Buckley, Burdick, Culver, Domenici, Gravel, McClure, Montoya, Morgan, Muskie, Stafford, Baker and Randolph voting in the affirmative and Senator Gary Hart voting in the negative.

## COST OF LEGISLATION

Section 252(a)(1) of the Legislative Reorganization Act of 1970 requires publication in this report of the Committee's estimate of the costs of reported legislation, together with estimates prepared by any Federal agency. Estimates of the cost of activities authorized by this bill were not prepared by any Federal agency. The following table summarizes authorizations contained in the bill for the transition quarter and fiscal years 1976, 1977 and 1978:

### SUMMARY OF AUTHORIZATIONS

[In millions of dollars]

	Fiscal year 1976	Transition quarter	Fiscal year—	
			1977	1978
Clean air program—Except sec. 103(f)(3), 103(d), 104, 110(h)(8), 150–159 212, 315, and 403.....	\$300	\$75	\$200	\$200
Transportation planning grants (sec. 110(h)(8)).....			75	
National Commission on Air Quality (sec. 315).....			17	

In accordance with section 403 of the Congressional Budget Act of 1974, the Congressional Budget Office has prepared a report on the costs to be incurred by the Federal Government resulting from the enactment of this bill. Such cost estimates are set forth below:

### CONGRESS OF THE UNITED STATES, CONGRESSIONAL BUDGET OFFICE, Washington, D.C., March 3, 1976.

HON. JENNINGS RANDOLPH,  
*Chairman, Committee on Public Works,*  
*U.S. Senate, Washington, D.C.*

DEAR MR. CHAIRMAN: Pursuant to Section 403 of the Congressional Budget Act of 1974, the Congressional Budget Office has prepared the attached cost estimate for the Clean Air Act Amendments of 1976.

Should the Committee so desire, we would be pleased to provide further details on the attached cost estimate.

Sincerely,

ALICE M. RIVLIN,  
*Director.*

## CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

MARCH 3, 1976.

1. *Bill Title: Clean Air Act Amendments of 1976*
2. *Purpose of Bill*

The Clean Air Act authorizes the Environmental Protection Agency to conduct a research and development program, set national air pollution standards, provide assistance to the states and enforce various regulations. The proposed amendments of 1976 would adjust some emission standards, expand the research effort and extend EPA's regulatory responsibilities.

The section of the bill concerning mobile sources relaxes the statutory standard for nitrogen oxides and extends the deadline from 1978 to 1980 (1979 for 10 percent of production). It also extends the statutory deadline for carbon monoxide and hydrocarbons one year, from 1978 to 1979. Emission standards are to be set for heavy duty vehicles, motorcycles, and railroad locomotives. The prohibition on tampering with pollution control devices is extended and the EPA is required to establish production line tests for new automobiles. The bill would also provide grants to local governments to assist in the development of plans for the control of transportation-related emissions. This section would permit a delay in achieving pollution standards if the states agree to implement reasonable transportation control measures. EPA funds can be terminated where standards are not met and plans are required.

The provisions concerning stationary sources authorize extensions in compliance schedules where necessary and monetary penalties for delinquent firms. Areas where the air is now cleaner than the existing standards are protected by non-deterioration standards. Special safeguards are established for parks and other areas of national significance. The bill authorizes the EPA to seek civil penalties in cases involving violations of the Act and requires all federal facilities to comply with local standards and procedures.

The amendments also authorize a number of studies. A National Commission on Air Quality would be established to study the adequacy of the Clean Air programs. The EPA and other agencies would also study the impact of aerosol propellants on atmospheric ozone and analyze the effects of other pollutants.

This bill is an authorization and does not directly provide budget authority. Actual funding is subject to subsequent appropriations action.

### 3. *Cost Estimate*

Federal costs would be incurred as a result of the re-authorization of the Clean Air programs. Additional spending would result from the creation of a Commission on Air Quality, the implementation of the transportation planning grant program and the expansion of the

ozone research effort. The estimated costs of these activities are shown below.

## COST

[In millions of dollars]

	Transition- quarter	Fiscal year—				
		1977	1978	1979	1980	1981
Existing clean air programs <sup>1</sup> -----	59.0	224.0	300.0	160.0	32.0	-----
Transportation planning grants <sup>2</sup> -----		19.0	45.0	11.0	-----	-----
Commission on Air Quality <sup>3</sup> -----	.3	1.4	8.5	6.8	-----	-----
Ozone studies <sup>4</sup> -----	2.8	11.1	14.7	15.6	16.6	17.6
Total-----	62.1	255.5	368.2	193.4	48.6	17.6

<sup>1</sup> Outlays associated with the following authorization levels: Fiscal year 1976, \$300,000,000; transition quarter, \$75,000,000; fiscal year 1977, \$200,000,000, fiscal year 1978, \$200,000,000.

<sup>2</sup> Outlays associated with a \$75,000,000 authorization.

<sup>3</sup> Outlays resulting from an initial authorization of \$17,000,000.

<sup>4</sup> Some agencies would require a reauthorization after fiscal year 1977.

#### 4. Basis of Estimate

*Existing Clean Air Programs (Sec. 318).*—The estimates are for outlays associated with the authorization levels in this section. Under Section 318, \$300 million is authorized for fiscal year 1976, \$75 million for the transition quarter, \$200 million for fiscal year 1977, and \$200 million in fiscal year 1978. It was assumed that the authorization levels specified in the bill would be spent within three years, beginning in the transition quarter. For every authorization level, it was assumed that 44 percent would be spent during the first year, 40 percent in the second and 16 percent in the third. The 44-40-16 rate reflects the spending pattern observed in the Clean Air program in recent years.<sup>1</sup> In the case of the 1976 authorization, 44 percent was allocated to the transition quarter and fiscal year 1977. One-fifth of that sum was then allocated to the transition quarter.

*Transportation Control Planning Grants (Sec. 110(h)(8)).*—The \$75 million authorization level for the grant program is also assumed to be disbursed within three years, but spending would not begin until fiscal year 1977 because of delays related to program initiation. Because of application and certification delays, it was assumed that 25 percent would be spent in fiscal year 1977, 60 percent in fiscal year 1978 and 15 percent in fiscal year 1979. This pattern resembles that observed in EPA's Control Agency Support program which disburses similar grants.<sup>2</sup>

*Commission on Air Quality (Sec. 315).*—The amendments authorize \$17 million for the Commission and require a final report within three years of enactment. This was assumed to be March of 1979. It was also assumed that 10 percent of the funds would be spent during the transition quarter and fiscal year 1977, 50 percent in fiscal year 1978, and 40 percent during the first half of fiscal year 1979. This spending pattern resembles that of the Commission on Water Quality, a commission charged with similar responsibilities.

<sup>1</sup> This pattern applies to non-research programs. Source: Office of Program Management, EPA.

<sup>2</sup> Ibid.

*Ozone Studies (Sec. 150-159).*—This part of the bill would direct nine Federal agencies to either undertake or encourage research projects related to the environmental and economic effects of reduced levels of atmospheric ozone. The \$13.9 million estimate is based on an accelerated research effort which would be focused on monitoring atmospheric ozone and significantly expanding the existing data base. According to EPA <sup>3</sup>, \$900,000 would be devoted to an analysis of the climatic impact of lower levels of ozone and increased ultraviolet radiation. Three million would be allocated to a study of the health effects, \$4.0 million would be used to analyze the impact on agricultural products, biological processes and wildlife and \$6 million would be spent for the instrumentation required for data collection. Because future studies are required, it was assumed spending would continue beyond fiscal year 1977. Future spending was estimated using the \$13.9 million base figure and CBO projections of changes in the Consumer Price Index.

5. *Estimate Comparison:* None available.
6. *Previous CBO Estimate:* None.
7. *Estimate Prepared By:* Robert M. Gordon (225-5275).
8. *Estimate Approved By:* \_\_\_\_\_,  
for James L. Blum, Assistant Director for Budget Analysis.

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<sup>3</sup> Office of Planning and Review, Research and Development, EPA.

## INDIVIDUAL VIEWS OF SENATOR RANDOLPH

This important legislation is a modification of the air pollution control program established by the Clean Air Amendments of 1970. This measure was developed by Committee Members with the full awareness of events that had taken place within the past five years. It recognizes substantial progress made in implementing the 1970 Act. We improved the total thrust of the air pollution control program.

The development of this legislation required more than ten months. It was lengthy but it was thorough in which each of the many complex and often controversial issues were given full consideration. The Committee bill is essentially an accommodation of numerous viewpoints. It is a consensus measure reflecting the feelings of Committee Members as to how the basic goal of the program can and should be achieved. There is no deviation from that goal: the achievement of clean air to protect public health and welfare by reducing the emission of pollutants.

The most significant feature of this bill is the increased responsibility given to States to develop and implement air quality improvement programs. The 1970 legislation recognized the critical nature of the State role in pursuing a reasonable and workable program. This measure enhances the State role, especially in the critical area of balancing economic and social conditions with the requirements for environmental enhancement. States, for instance, have authority to determine the elements of "best available technology" when its use is required. States also define reasonable components of transportation control plans and determine progress toward achieving ambient air quality standards in connection with the expansion of industrial facilities. The provision relating to industrial expansion recognizes the need to enlarge productive capacity but to do so in a manner that does not compromise the integrity of the air quality program. Much new construction by heavy industry is likely to take place in those areas where there already are concentrations of such facilities. This bill authorizes States to provide for industrial growth in those parts of air quality regions where ambient air quality standards are presently exceeded. Such expansion can take place, however, only under conditions which assure continued progress toward meeting those standards.

The need to expand facilities is particularly important to the steel industry. While the provisions of the bill permit new construction under carefully controlled conditions, these provisions should not be frustrated by Federal administrative actions. Concern has been expressed that the Environmental Protection Agency may attempt to enforce requirements adopted in State implementation plans which are not related to the attainment of air quality standards. Limitations on visible emissions and opacity limitations, where they are not related to ambient air quality standards, should not be imposed to restrict expansion of industrial capacity.

The legislation also modifies existing provisions of law to facilitate greater use of coal as a substitute for increasingly expensive and scarce natural gas and oil. This is another area in which economic and environmental concerns are accommodated in a realistic and workable fashion. Coal-burning industrial facilities must utilize emission control procedures so that there is no long-term adverse impact on air quality by the conversion to coal. Again, the States have increased responsibility through their authority to determine when or if conversion to coal can take place.

The 1970 Act represented a full scale commitment of the American people, acting through the Congress, to achieving clean air. This bill represents a stage in the evolutionary process that must necessarily take place when a society such as ours undertakes such a far-reaching effort. Its enactment and proper implementation will permit further progress toward a goal from which there should be no retreat.

JENNINGS RANDOLPH.

## INDIVIDUAL VIEWS OF SENATOR MUSKIE

I voted to report this bill. I support many of its provisions. Like other Members of the Committee, there are provisions which I could not support and there are amendments I supported but were not adopted.

This is a bill that continues the effort to preserve and enhance the quality of the Nation's air. It is a bill that reflects the minimum changes necessary to improve certain features of the Clean Air Act to accommodate perceived economic conditions. To the extent this bill reflects both of those requirements, it is a useful and important measure. I would be concerned if it were construed as anything else.

There was great pressure to reverse the effort to protect and enhance the quality of the Nation's air. The Members of the Committee were confronted with allegations that the Clean Air Act and other environmental legislation pose unacceptable limits on this country's capacity to grow. The Committee examined these allegations and rejected them.

I believe that an economic growth policy which abandons environmental objectives would be a foolish course. The Nation must have clean growth. If the price of that clean growth is to restrain the size of particular activities pending the development of new pollution control technologies or new production procedures, then new technologies and processes can and will be developed in order to take advantage of the economies of scale.

Conversely, if environmental objectives are abandoned simply to accommodate the economies of scale, new pollution control technologies will not be developed, and the result will be environmental chaos.

The facts on the record clearly suggest that subtle and often irrevocable changes are being made in man's basic life support system as the result of uncontrolled dispersion of pollutants into the environment. Almost without exception, research into the effects of dispersal of these pollutants has given us more, rather than less, reason to be concerned. To ignore these problems because they are not fully understood is to court catastrophe.

In the short term, these problems may not seem to justify the level of investment that environmental controls require. But it only takes one disaster of the scope of the current "Kepone" crisis to demonstrate that environmental damage once done may be irreversible.

The burden of environmental protection should rest with those who use environmental resources. The cost of control ought to be borne by those who produce the problem. The polluter should bear the responsibility to show that use of the environment for dispersal of wastes is free from risk.

The structure of these amendments continues to support these objectives. I will work for enactment of the legislation and I will oppose efforts which would compromise its purpose.

EDMUND S. MUSKIE.

## INDIVIDUAL VIEWS OF SENATOR MONTROYA

The bill which is being presented to the Senate is the result of many months of hearings and hard work by both the Subcommittee on Environmental Pollution and the Full Committee on Public Works. I commend my colleagues for their diligence and dedication. As drafted, the bill addresses issues of major concern to all Americans and I support the efforts of this Committee to develop solutions to very complex problems. I do wish, however, to present for the consideration of my fellow Senators some additional views on several areas of special concern to me.

In implementation of the present Clean Air Act, the Environmental Protection Agency has left a gaping lack of discrimination between the various types of particulates. Some are natural, background particulates such as dust in the air, which have always been with us. Powdered and fired rock-like impurities in coal are another type of particulate, known as fly ash; some portion of the sulfur dioxide which is a common emission is known to be transformed in the atmosphere into sulfuric acid mist and a variety of other sulfates; steel plants have still a different set of associated particulates; copper smelters and other nonferrous smelters must face a greater range of possible particulate emissions due to a wide variety of minerals and compounds in different ore bodies.

Despite all this, the EPA measures all particulates in terms of weight, that is as micrograms per cubic meter in the ambient air. This omits the crucially important issues of how to prioritize one size or type of particulate over others as a health risk or as a welfare risk. The health effects of different types of emissions vary greatly. The health effects of different sizes of particulates vary enormously. In the absence of reliable scientific information, the Congress has no alternative but to continue to treat all types and sizes of particulates equally in this bill.

Air quality standards are based on the need to protect health and welfare. They were not justified upon economics. Yet, in application, they appear more relevant to economic and to technical feasibility than to health or to welfare. The EPA frequently defends an air quality standard or an emission limitation for a pollutant in terms of whether it is feasible to meet the requirement. Emission limitations for individual plants and for entire industries are defended upon the basis for feasibility. Yet, the Committee rightfully seeks health and welfare criteria as the rationale for legislative mandates.

We cannot continue to protect health and welfare by setting requirements which lack certainty and which are often attacked and defended on the basis of technical and economic feasibility. To remain credible with the people, environmental groups and industry, we must insist on a clearer understanding of the effect of air quality standards and

emission limitations and of the probability and of the cost of achieving our objectives. When stringent standards are needed to protect health, I shall continue to strongly support them. When stringent standards are needed to protect welfare, I will support them to any reasonable limit. When clearer air is desirable and we can achieve it with a tolerable burden I will support that objective. When higher requirements are needed to advance air pollution abatement technology, I will support that, also. But I am increasingly concerned that we still remain uncertain after years of EPA research. We have not achieved clear data as to just what effects we are likely to achieve with legislation on increments, on ambient standards or on emission controls.

I strongly favor an increased effort by EPA to evaluate each of the various emissions and combinations of emissions, especially in terms of health effects. I favor this approach not in order to reduce our commitment to a clean environment, but to make wiser decisions as to where the emphasis and resources are needed. With our limited National energy supplies and economic resources, we cannot afford to misplace our efforts.

The increments of additional emissions under the no significant deterioration provision of the Clean Air Amendments of 1976 are another example of an unclear objective. The increments are to be permitted in addition to existing "base line" emissions. Therefore, the values which we are protecting with these increments will be subjected to the same variances of air quality which now exist in our clean air region has exceeded the primary or secondary standard. It is clear, as now defined, that a standard is exceeded if the second highest 8-hour "major source" are not counted in measuring the increment which will be permitted. Under this arrangement, the total amount of additional air pollution which will be allowed does not take into account the growth which will result from major sources. Therefore, there is no specific upper increments of additional pollution which is permitted in clean air regions. There is no uniform degree of protection.

There is further uncertainty as to when an air quality maintenance region has exceeded the primary or secondary standard. It is clear, as now defined, that a standard is exceeded if the second highest 8-hour or 3-hour period of the year exceeds the air quality standard. It is much less clear as to the utility of this measurement. If we were to use a more accurate monitor, or if we were to move the monitor a city block, or if we redefined the time interval, the results would probably differ. If we have many incidents of reduced air quality which are near the second highest of the year, there is much more health and welfare impact than if there were few. The EPA criteria, which is permitted in the Clean Air Act does not take that variation into account. Certainly, several pollutants at one time have a stronger health effect than any one pollutant taken separately, but the EPA criteria under the Clean Air Act does not take that variation into account either. There can be no legislative remedy to this uncertainty at this time in the absence of badly needed research data.

There is no authority in this bill delegated to EPA to balance between low levels of hydrocarbons and carbon monoxide and relatively higher emissions of oxides of nitrogen for new technology such as automobile diesel engines. A balance is desirable. The emission stand-

ards were set in part in relation to what can be achieved, not in relation to specific health effects. There is more need to reduce hydrocarbons and carbon monoxide than to reduce oxides of nitrogen. Lack of an emissions balance could inhibit the development of fuel efficient diesel engines in the future. Even though the environmental benefits outweigh the environmental penalties, the lack of delegation to balance one emission with another could shut off the promising diesel engine or other new auto technology.

Intermittent controls are vital to the operation of copper smelters and certain other nonferrous smelters. When used in conjunction with constant controls, they are known as supplemental controls. The Clean Air Amendments of 1976 accept existing supplemental controls as an approved environmental pollution control. The authority of each State to set standards more stringent than Federal requirements is protected in these Amendments. This State autonomy is essential because of clear local perception of environmental needs and in order to generate local involvement and commitment. The involvement of county, municipal, and other local governmental agencies, however, is not fully provided for in land use control related provisions of the Amendments. Although land use controls are not sought in these Amendments, they are unavoidable at times. The strong role of local governments which is provided in transportation control planning is not provided in land use controls. The absence of specific Federal requirements for local involvement in land use controls could weaken public support. State agencies should develop procedures which will assure full local participation in order to enhance the quality of land use strategy where those controls are essential to the goals of the Clean Air Amendments.

We have heard credible testimony that the 5 year/50,000 mile performance warranty provision of the Clean Air Act could create an unintended monopoly on many future auto repairs. That risk has not yet been fully verified because the full effect of the warranty is not in effect. No appropriate EPA test exists to determine whether emission related repairs are required on an automobile. I must take exception to the quotation by EPA in the report that "the aftermarket has demonstrated no present loss of business resulting from the Act, and that any anticompetitive problem is entirely prospective." Since the Clean Air Act performance warranty is not in full effect at this time, the anticompetitive effect cannot be fully known. There will be little effect of the warranty until the EPA emission performance test is approved and the warranty is fully operative. The report language now states one view of the potential monopoly controversy accurately, but the omission of the opposing view distorts the perspective.

I continue to harbor serious doubt that an auto manufacturer can reasonably be required under law to reimburse an auto owner for parts and labor when both were supplied by a local service station or independent shop. I understand that some members of the Committee changed their position on this issue, after the vote, based on new information, and that the vote in the Committee might well have been reversed if the issued had been reconsidered.

No member desires a shorter warranty of 18 months when the purpose of the warranty is to assure the cleaner auto exhaust which is provided by the Act. However, I feel that there are alternative means

to maintain a clean running auto and that the alternative means are preferable to the risk of a National monopoly in auto repairs.

Auto repair costs can soar to new highs, with much of the cost carried over as increases in new car prices. Thousands of small businesses may be threatened with loss of their customers. Customers may be deprived of the free choice to repair their autos where they wish. The consumer may be deprived of the right to repair his own vehicle.

None of these negative aspects are intended in the Amendments, of course. Strong language has been incorporated in the bill in an attempt to prevent the monopoly. I do not disagree with the intent of the 5 year/50,000 mile provision nor with the language in support of the provision. I disagree, however, that it is a reliable strategy. I feel that we must be prepared to alter our strategy to use an inspection/repair program outside the mandatory performance warranty.

JOSEPH M. MONTOKA.

## INDIVIDUAL VIEWS OF SENATOR GRAVEL

Clean air is a resource that benefits all of our citizens and its protection is of national importance. I have supported legislation to protect and enhance the environment in which we live while a Member of the Senate and I will continue to do so. The amendments to the Clean Air Act reported by the Public Works Committee represent constructive changes to the program resulting from a careful review of the five years of implementation of the Act.

There is one aspect of the amendments which gives me some difficulty. The significant deterioration provision injects a completely new scheme in our regulation of air quality by providing that levels of two pollutants, sulfur dioxide and particulate matter, must be strictly regulated in so-called clean air areas. The amendments envision that the State Implementation Plan be the mechanism for significant deterioration.

While I support the need for a significant deterioration provision to protect air which is currently better than secondary standard, the method of regulation troubles me. The increments which are established in the significant deterioration provision provide the basis for determining whether a major emitting facility can be sited in an area designated as Class I or Class II under the State plan. These increments are those which were provided in the EPA regulations on significant deterioration issued in December of 1974. I am not convinced that these increments bear any relationship to the maintenance of clean air and were not adequately studied as they affect all regions of the country.

Natural conditions in many parts of the country mean that no development would be permitted even though the values that significant deterioration is designed to protect would not be affected. Temperature inversions and natural dust mean that many areas of Alaska could not meet the 24 hour and annual increments established for sulfur dioxide and particulate matter. Other areas of the country face the same problem.

I voted for the significant deterioration provision and will continue to support it as part of the amendments. However, I believe careful study should be given to the increments to determine their relationship to clean air values. To insure that this is done, the National Air Quality Commission is to study the increments. I believe this is an important study and essential to enacting meaningful pollution control legislation.

Overall, the bill brought to the Senate by the Public Works Committee is well conceived and continues the goals of the Clean Air Act. I fully support this legislation since I believe it advances toward the ultimate goal of a clean environment for all of the citizens of this Nation.

MIKE GRAVEL.

## INDIVIDUAL VIEWS OF SENATOR BENTSEN

The 1976 Amendments to the Clean Air Act are the product of long months of effort by the Environmental Pollution Subcommittee and the full Public Works Committee. While I do not fully agree with all of the provisions, I do believe the Congress must act this year on a number of issues which are addressed in these amendments.

One provision which still deeply troubles me is the language included on the motor vehicle performance warranty. While it reflects a concern over the potentially anticompetitive consequences of the motor vehicle performance warranty, it does not ensure that those consequences will be avoided.

I believe that the warranty's implementation will increase the purchase price of a car by \$250 or more; sharply restrict the carowner's service options; freeze tens of thousands of small, independent parts manufacturers, distributors, and service stations out of routine auto service work; and result in only a further concentration within the automobile industry. I do not believe that future progress toward reducing automobile emissions requires us to facilitate the growth of monopoly in this country.

The 1970 Act specifies that the automakers may condition the required 5 year/50,000 mile performance warranty upon the proper maintenance of the vehicle—the routine repairs performed according to the schedule outlined in the owner's manual. The Committee agrees that this condition is not intended to prevent the use of non-original equipment manufacturer's parts or repair work by the Nation's hundreds of thousands of gas stations and independent repair shops, or by the carowner himself. However, I believe the language in this year's amendments does not effectively prohibit the automakers from so conditioning their warranty.

Section 29 of the bill attempts to translate our concern into an actual statutory prohibition. It reads, "The instruction under subparagraph (A) of this paragraph shall not include any condition on the ultimate purchaser's using, in connection with such vehicle or engine, any component or service (other than a component or service provided without charge under the terms of the purchase agreement) which is identified by brand, trade, or corporate name; or directly or indirectly distinguishing between service performed by the franchised dealers of such manufacturer or any other service establishments with which such manufacturer has a commercial relationship, and service performed by independent automotive repair facilities with which such manufacturer has no commercial relationship . . ."

That would seem clear enough. However, the Administrator of the Environmental Protection Agency is also authorized to waive the prohibition if "the manufacturer satisfies the Administrator that the vehicle or engine will function properly only if the component or service so identified is used in connection with such vehicle or engine." That

waiver is the chief cause of my concern and may provide the Pandora's box which we all wish to avoid.

The automakers can be expected to request that parts which affect the performance of the emissions system—and which must be routinely and regularly replaced during the vehicle's useful life—meet their exact specifications, or be certified equivalents. More importantly, they can be expected to insist that the service work directly bearing on the functioning of that system be performed by technicians whom they have trained, who are thoroughly familiar with the vehicle, and who are within their established warranty system. Their case could be quite effectively argued, and rulings in their favor might well result.

Were such waivers granted, the consequences which the authors of the provision wish to avoid—freezing out the independent parts manufacturers, distributors, gas stations, and repair shops from much of the Nation's auto service work and the resulting further concentration within the automobile industry—would again become likely. The American public currently chooses the independent sector to perform 80–85 percent of all of its automotive service work. The independent sector is so chosen because it is price competitive. Implementation of the 5/50 performance warranty could well drastically reduce that figure, to the great dismay of the car owning public.

The car owner would be adversely affected. Were the waiver granted, his service options would be sharply restricted. To ensure that he retained his coverage under this warranty, he would feel obligated to have his franchised dealer perform the vast majority of the regular routine repairs. By choosing to do the work himself or having it performed by an independent repair shop, he would risk invalidating his performance warranty, a warranty which could have cost him \$250 (1974 estimate) when he purchased the vehicle.

Neither those restrictions on the carowner's choice nor the resulting further concentration within the automobile industry should be the results of public policy, and yet the Act as currently written or as amended by this bill will not prevent them from occurring.

The waiver provision has been included, however, because a question of basic equity is involved. Were the prohibition on conditioning the warranty to certain parts and service to be absolute, the law would be requiring one party to be financially liable for the performance of a system over which it had no real control—either over the parts used or the mechanics involved. That would be a denial of elemental fairness, and I know of no similar intrusion between a manufacturer and his product.

We must remember that far more than a catalytic converter is involved here. The satisfactory performance of an emission control system depends upon the adequate functioning of scores of related parts. No agreement exists as to the exact number of those related parts, but both EPA and the manufacturers apparently agree that at the very least, they would include air cleaners, oil filters, drive belts, motor oil, carburetors, distributors, hoses, manifolds, PCV valves, chokes, exhaust gas recirculation system, evaporation control system, engine coolants, vacuum fittings, intake and exhaust valves, ignition timing and advance systems, wiring, and the fuel pump. EPA has, in fact, already designated more than 400 car parts which, it believes, have a direct bearing on the emission system's performance.

One purpose of the performance warranty is to provide a double assurance that durable emission control systems are built and marketed. That concern is, however, adequately addressed by the production warranty of section 207(a) which requires the automakers to design, build, and equip vehicles to meet the required emissions standards. The manufacturers cannot sell a vehicle or engine until it is so certified. Moreover, EPA is only months away from implementing its assembly line test which will be another check to ensure that all vehicles meet the requisite standards before they are sold. These requirements on the automobile manufacturers are essential, but they would also seem to obviate the need for a 5 year/50,000 mile production warranty replete with such highly anticompetitive consequences.

The other purpose of the warranty would seem to be an assurance that needed repairs are actually made. Within several years, car-owners in our metropolitan areas will not be allowed to drive their vehicles unless they pass both a safety and an emissions test. Drivers now assume responsibility for maintaining their tires, lights, and brakes. They are able to choose the service which keeps their vehicle in safe operating condition. I see no reason why they should not be allowed a similar choice in maintaining their emissions system.

During consideration of the bill, I offered an amendment which would:

Require EPA to establish procedures for certifying motor vehicle parts or engine parts so that the manufacturer—including the independent manufacturers—can duly claim that their use will constitute proper vehicle maintenance.

Prohibit the vehicle manufacturer from invalidating the performance warranty when parts not manufactured by it but duly certified have been used.

Amend the performance warranty to cover the first 18 months or 18,000 miles.

Require compensation by the automaker to the carowner for emission control repairs performed on a vehicle which subsequently becomes the subject of a recall order.

Call upon the Federal Trade Commission to undertake a study of the anti-competitive effects of the performance warranty. If the FTC were to find that the anti-competitive effects would be far less than now anticipated, the performance warranty would revert to the current 5 years/50,000 miles.

I believe this approach would have far more effectively precluded the consequences which we all hope to avoid. I believe, too, that it in no way would have diminished the manufacturers' responsibility to build and equip their cars with durable emissions control systems. The question really becomes when the carowner is to pay for any emission control repairs—at the time of purchase or when the work is actually performed. If the latter course is chosen, the carowner will have the option of choosing whomever he wishes to perform that and all prior service. He can be expected to choose the least expensive option. In so doing, he will not be implementing a public policy which might inadvertently result in further concentration within the automobile industry.

LLOYD BENTSEN.

## INDIVIDUAL VIEWS OF SENATOR MORGAN

The Clean Air Act Amendments of 1976 comprise a complex piece of legislation having an extensive legislative background. The issues and goals involved in the Amendments reported here are grounded in concerns which reached the forefront of American consciousness in the 1960s. The need for legislation which deals directly with the problems of air pollution has been well established.

The debate over how far this country must go in its efforts to stem air pollution, what levels of our society should shoulder the most responsibility for the restoration and maintenance of air quality, and what means will best implement our ends in this regard will certainly continue. As the economic climate of this Nation shifts and the seats of highest power change hands, so will this debate be regulated. One thing, however, will remain firm in my own mind. The States must carry the greatest part of the responsibility for insuring that the health and welfare of the Nation's population is protected. Those who make the decisions at the local and State levels of government must be the ones to study their particular air quality situation and determine the most efficient method to effectively deal with it.

One area which has greatly concerned me in the Public Works Committee's deliberations over the Clean Air Amendments is that of the individual State's decision-making authority as provided by these amendments. I would like to note several concepts expressed in the General Statement of this Report concerning the role of the States:

The authority of States and localities to implement air pollution control programs within the framework of a national policy must be encouraged. The problem of our pollution exists at the State and local level. That is where the resources must be directed. The Federal Government has a responsibility to provide support for those regulatory activities, but it need not have an actual presence in all regulatory activities.

Public problems must be solved at the level of government most capable of dealing with them.

The Federal role must be one of support rather than control.

It is to this question of State authority that I want to address myself. In particular, I am most interested in the issue of Land-Use Controls as provided for in the Amendments.

The Clean Air Act of 1970, section 110(a)(2)(B), states one of the requirements which a State must meet before the Administrator of the Environmental Protection Agency can approve the submitted

State Implementation Plan. 110(a)(2)(B), referring to the State Implementation Plan, directs that:

... it includes emission limitations, schedules, and timetables for compliance with such limitations, and such other measures as may be necessary to insure attainment and maintenance of such primary or secondary standards, including, but not limited to, land-use and transportation controls;

In writing the 1976 Amendments to be considered by the full Committee, the Subcommittee on Environmental Pollution delineated transportation controls in a new section 120. This was an extensive section which established time schedules and control measures to be implemented in order to abate the vehicle-related pollution and attain and maintain the primary and secondary standards of air quality. In brief, the newly-written Transportation Control section established boundaries within which the States and EPA would work.

There was no mention of Land-Use Controls in the new amendments; instead section 110(a)(2)(B) of the original Act was left intact. Therefore, the Administrator of EPA could disapprove a plan because it did not include Land-Use Control measures.

My primary concern was that even if a State could move toward attainment and maintenance of the standards without providing for Land-Use Controls, the Administrator could send a State Implementation Plan back as disapproved. I also was concerned that, in revising and promulgating a new plan, the Administration could write Land-Use measures into the State Plan and impose them on the State.

Subsequently, I introduced an amendment to the full Committee which would amend section 110(a)(2)(B) as follows:

(B) it includes emission limitations, schedules, and timetables for compliance with such limitations, and such other measures as may be necessary to insure attainment and maintenance of such primary or secondary standard, including, but not limited to, land use and [in accordance with section 120 of this Act] transportation controls; *provided, however, that the Administrator shall not require the inclusion of land use planning or regulatory measures in an implementation plan as a condition of his approval of such plan nor shall the Administrator include land use planning or regulatory measures in any implementation plan or portion thereof which he may propose or promulgate;*

The language contained in brackets was proposed in the Committee's sixth rough print of the Amendments. Language in italic was the language which I introduced.

"In accordance with section 120 of this Act" clearly demonstrated that there had been limits set down for the use of Transportation Controls. No such limits on Land-Use Controls had even been suggested by the Subcommittee in their writing of the new Amendments.

The amendment which I introduced was accepted by the full Committee, but a day later further language was introduced by Senator Burdick. This was presented as a substitute for the language which I introduced.

Senator Burdick's amendment sought to tie the use of Land-Use Controls to maintenance of air quality. In other words, Land-Use measures could be implemented by the State or EPA in order to insure that standards which had been reached would be kept at those

levels or, in areas which would not meet the promulgated standards, Land-Use Controls could be implemented to keep whatever air quality had been reached from slipping down to dirtier levels.

Again, it is section 110(a)(2)(B) which is affected, and I shall only note the most germane portion:

(B) . . . (ii) land-use controls for the purpose of maintenance of, or to prevent further deterioration from, any primary ambient air quality standard: *Provided, however,* That land-use controls shall be included in an implementation plan only after consideration of the energy, environmental, and economic impacts of such controls;

I voted in favor of the Burdick Amendment concerning Land-Use Controls. It seemed that this was the best language that would satisfy the majority of the Committee.

I still hold the same concern that prompted me to introduce my Land-Use amendment in the first place. I would like to be certain that the EPA will not be able to impose Land-Use Controls on those States who can meet the requirements of the Act without them.

Of course, I understand that there are and will be those areas of the Nation which will need to implement some forms of Land-Use Controls to move toward the goals which have been established. I think that goes without saying. But let us remember: "The problem of air pollution exists at the State and local level. That is where the public understands the problem. That is where the resources must be directed. The Federal role must be one of cooperation rather than control."

The EPA was not intended at its inception to be a promulgator of Land-Use Controls. I do not believe that they have the expertise in that area which would make them an effective director of such measures.

In addition, if Land-Use measures are to be federally imposed on a State or locality, then it should be for the purposes of maintenance, not attainment of air quality standards. The direct cause of the problem which Transportation and Land-Use Controls would seek to alleviate is the emission of pollutants from automobiles. We should strive to abate that pollution at its source, and I believe that the legislation which the Public Works Committee has reported will move toward that goal if everyone does his part to keep his car running well, to use conservation measures as much as possible, and to remember that what we do now in the area of air pollution control will be our legacy to the future.

ROBERT MORGAN.

## INDIVIDUAL VIEWS OF SENATORS BAKER, BUCKLEY, AND STAFFORD

One of the more controversial issues that has arisen with this bill involves the relationship between the automotive warranty requirements in present law and the need to assure fair and free competition in the servicing of automobiles.

Reasonable pressure must be kept on the automobile industry to assure the cars which consumers buy actually meet the clean-air standards when sold, and then continue to meet those standards. But we are equally firm in recognizing the need to prevent any anti-competitive effects resulting in the auto servicing business.

To balance those forces, the Committee has included five specific provisions in this bill: Sections 25, 27, 28, 29, and 39. We support those sections. The full description of these provisions in the report states accurately the problem and the major improvements provided by this bill. But to protect further the right of the consumer to have repair work done wherever he chooses, we shall also offer an amendment that we believe perfects the intent of the Act.

This amendment is necessary because of the strong conviction remaining among some representatives of the independent auto parts and service industry that the Clean Air warranty could drive business into the shops of the car dealers. That is *not* the intent of the Committee. That will *not* be the effect of this bill.

The first part of our amendment is a substitute for the provisions of section 27, which requires prepayment for any device "principally" for pollution control that costs \$75 or more; we require that such prepayment extend only to items such as the catalytic muffler and that the price be based on a percentage of the car's sale price, rather than a fixed dollar amount.

The second part of our amendment makes clear that it is the car owner's responsibility to maintain his car properly. It makes explicit what is now implicit in the law. It will be the responsibility of the owner to have this maintenance done on parts that have a design life less than the 50,000 mile "useful life" of the car, such as spark plugs or motor oil. We reiterate that maintenance work may be done wherever the owner wishes, without jeopardizing the owner's rights under the warranty.

An illustration may prove helpful: Spark plugs, which may have a listed design life of 12,500 miles, may need to be replaced on a particular car at 14,000 miles. It has been argued, incorrectly we believe, that the warranty requires the car owner to return to his dealer to have those spark plugs replaced. It is the intent of present law—and it is spelled out in our amendment—that the owner carries the responsibility for this work, which can be done anywhere the owner wishes. If the owner does not make those needed replacements, and that failure is the reason the car fails an air-standards test, then that is

evidence of improper maintenance, voiding the warranty. Thus, our amendment should encourage wise and proper maintenance of cars.

An alternative approach suggested by others would reduce the warranty term to 18,000 miles. We believe that would be unwise. It would enable the automotive industry to relax its quality control to the point that cars in use become far heavier sources of pollution. It would increase the burden on the consumer to have cars brought back into compliance at the consumer's expense.

Under an 18,000-mile warranty, the consumer could be hit with costly repairs if the consumer must bring his car into compliance with the standards after 18,000 miles. By assuring that the responsibility rests on the manufacturer for 50,000 miles, the law encourages the auto industry to maintain its quality control at a high level, while giving the consumer a reasonable right against the manufacturer.

Specifically, the language we will submit on the floor states:

#### AFTERMARKET AMENDMENT

The following is substitute language for section 27 of the bill:

"Sec. 27. Section 207(a)(1) of the Clean Air Act is amended by adding the following new sentences at the end thereof: 'The cost of any part, device, or component of any light-duty vehicle that is designed for emission control and which in the instructions issued pursuant to subsection (c)(3) of this section is scheduled for replacement during the useful life of the vehicle in order to maintain compliance with regulations under section 202 of this Act, the failure of which shall not interfere with the normal performance of the vehicle, and the expected retail price of which, including installation costs, is greater than 2 per centum of the suggested retail price of such vehicle, shall be borne or reimbursed at the time of replacement by the vehicle, manufacturer and shall be provided without cost to the ultimate purchaser, subsequent purchaser, or dealer. The term 'designed for emission control' as used herein means a catalytic converter, thermal reactor, or other component installed on or in a vehicle for the sole or primary purpose of reducing vehicle emissions. It is not intended to include those vehicle components which were in general use prior to model year 1968 and the primary function of which is not related to emission control.'

The following adds a new subsection at the end of section 207 of the Clean Air Act: "(g) For the purposes of this section, the owner of any motor vehicle or motor vehicle engine warranted under this section is responsible in the proper maintenance of such vehicle or engine to replace and to maintain, at his expense at any service establishment or facility of his choosing, such items as spark plugs, points, condensers, and any other part, item, or device related to emission control (but not designed for emission control under the terms of the last three sentences of Section 207(a)(1) that has a design life of less than the useful life of such vehicle or engine, unless such part, item, or device is covered by any warranty not mandated by this Act or unless such part fails prior to its design life."

HOWARD H. BAKER, Jr.  
JAMES L. BUCKLEY.  
ROBERT T. STAFFORD.

## INDIVIDUAL VIEWS OF SENATORS BUCKLEY AND STAFFORD

This bill is one of deep complexity and broad ramifications for our society. It is legislation that continues the promise of achieving clean air, and then preserving that clean air. But it is also legislation that moves this Nation forward in a manner that is judicious and reasonable.

The Subcommittee on Environmental Pollution and the full Committee on Public Works met on 48 occasions to develop this bill. We have produced a clean-air strategy with four basic components: reasonable modifications in the present automobile standards, a plan for coordinating stationary source compliance schedules, a system to move more effectively into transportation control plans in major cities, and a yardstick for preventing the significant deterioration of air quality in clean-air areas.

Many argued that the Committee should avoid some of these problems—particularly that of significant deterioration. But the Committee chose wisely to evaluate, discuss, develop, and work out this and other issues until we reached a consensus. No other action would have been responsible.

Despite its length and scope, the 1970 Clean Air Amendments failed to develop in detail many facets of the national clean-air strategy. That law failed to detail such directives as the requirement to "protect and enhance" the Nation's air quality and requirements for "transportation controls." The courts have been called on to interpret these directives, generally upholding the requirements in the law. The Environmental Protection Agency has followed these decisions with programs that put flesh on the court decisions.

Under the Constitution, the Congress has the responsibility to define national policy. For the Congress to leave the resolution of these issues to the agencies and the courts would not have been in harmony with that responsibility.

We believe that we have resolved these knotty issues in a way that is fair and equitable. We have granted extra time and new latitude for transportation controls programs.

We have established a flexible and reasonable standard against which to measure significant deterioration, not one involving land-use designations or giant clean-air buffer zones, as many had feared. To argue that this legislation imposes a new philosophy of Federal land use planning is not an accurate reading of the bill or the existing law. When the Congress established national ambient air quality standards in 1970, the Congress imposed the need to determine the impact of a new plant on the air quality in the area of the plant. The prevention of significant deterioration in this bill defines that directive. Significant deterioration is a definition, stated in concentrations of ambient pollutants. It is not a new approach or a new philosophy.

The Committee bill also underlines the strategy that places major reliance in the hands of the States to carry out a reasonable program assuring clean air for future generations.

This bill deserves strong support. We urge our colleagues to study it with care. When they do, we believe they will find it reasonable, effective, and worthy of that strong support.

JAMES L. BUCKLEY.  
ROBERT T. STAFFORD.

## INDIVIDUAL VIEWS OF SENATOR JAMES A. McCLURE

While I signed the Committee Report and am in general agreement with the views expressed, my individual views are intended to balance the Committee report in some areas where I believe it is not balanced.

The Committee report is based on the assumption that its purpose is to justify the bill. My position is that the report should present the facts and analyses on which the bill is based. Many policy choices are presented and nearly all such decisions require a balancing of the positive and negative consequences of each choice. I believe the report should fairly state the offsetting results of a policy choice so that the Members who have not had the advantage of Committee hearings and discussions will have a better understanding of the issues involved and the consequences of the proposed legislation.

To place the Clean Air Act Amendments of 1976 into a clearer perspective, I believe that it is worthwhile to briefly examine our progress. The Council on Environmental Quality, in its Sixth Annual Report, stated that "SO<sub>2</sub> had been reduced 25 percent nationwide. This decrease in SO<sub>2</sub> concentration is particularly evident in major metropolitan areas. Particulates, the other main pollutant from stationary sources, had been cut by 14 percent. Of the approximately 20,000 major stationary sources, 15,600 had either met the standards or had a schedule for doing so.

With respect to mobile sources, emissions from 1975 model automobiles had been reduced 67 percent from emission levels in vehicles built 5 years before. This compared to a 90 percent reduction mandated by Clean Air Amendments, but the earlier goal had been modified by the Congress in the Energy Supply and Environmental Coordination Act of 1974. Further, the assessment showed that compared to uncontrolled emissions, automobile emissions had been reduced: HC and CO levels were each 83 percent lower, NO<sub>x</sub> levels were 13 percent lower.

This progress does not mean, of course, that future efforts will be any easier or less demanding. On the contrary, I believe that we will find that our task will become more and more difficult as we continue to approach our goals. These 1976 Amendments to the Clean Air Act reflect, I believe, both the progress that has been made and the increased efforts that will be required. The final goal remains unchanged—to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population.

The purpose of these individual views is to further discuss three specific areas included in the Committee report: significant deterioration, automobile emission standards, and automotive warranty requirements.

## SIGNIFICANT DETERIORATION

The concept of "significant deterioration" is not contained in the present Clean Air Act. The significant deterioration regulations issued by EPA are based on court interpretation of the language "protect and enhance". The language cited in the Committee report to justify that interpretation is from the 1970 Senate report on clear air, not from the final Conference report on the 1970 amendments. It is inconceivable to me that the Congress would have made such a major change in existing law using the "Findings and Purposes" Section of the Act and without providing any guidance or explanation in the body of the Act. The fact that the House-Senate Conference did not include the Senate report language would further support the argument that significant deterioration was not intended as a national policy. The Committee action has, however, changed that situation. Significant deterioration is not specifically defined, but a strategy and procedure are mandated and it is provided for through a detailed set of policies and controls which EPA and the States must implement.

During Committee deliberations on this matter, I expressed concern about the problem of increased Federal control over matters which are primarily the responsibility of State and local governments. Specifically, I opposed the original significant deterioration language, which would have denied the States the right to make basic decisions affecting growth. Under existing law, the States already have the authority to establish more stringent air quality requirements than the Federal standards. If a State wants to establish a no-growth policy, that authority presently exists within the Federal statutes.

The final Committee provision provides for a greater degree of State authority, with a corresponding decrease in the Federal government's authority to limit growth. State authority to limit growth remains unchanged. What is changed is the increment of deterioration allowable between existing air quality and the existing national ambient standards.

An issue related to significant deterioration is the question of technology for removing sulphur dioxide from the exhaust gases of power plants and other stationary sources, commonly referred to as "scrubbers". Inasmuch as significant deterioration deals specifically with sulphur dioxide emissions, the question of scrubber availability is pertinent.

The Committee report states that EPA has determined that scrubbers have now become available. There is major disagreement, however. For example, the staff of the Missouri Air Conservation Commission reported:

There is not presently a large, 100 percent high-sulfur coal-fired plant (such as Union Electric's) operating with a (scrubber) system that can be considered to be prudently reliable and commercially proven.

The report also stated:

The technology to remove sulfur oxides is sufficient. It has, however, not been proven for large-scale application of existing facilities.

In addition, the National Academy of Sciences report on scrubbers described the serious environmental problems associated with scrubbers, particularly concerning water quality and sludge disposal. A typical 1,000-megawatt coal fired power plant would require 377 acres for sludge and fly ash disposal. According to the Academy's report, based on 90,000 megawatts of installed lime/limestone scrubbing capacity, "130,000,000 tons per year of wet sludge including ash would be produced."

Both Congress and EPA must carefully examine this technology, before the costs are forced into consumers' monthly bills, and make certain that we are not creating a serious environmental problem.

The issue with scrubbers is not one of balancing costs with expected environmental benefits. The issue is whether the Congress and EPA should force consumers to pay the enormous capital and operating costs of these devices, in light of the serious lack of evidence that they do in fact produce an environmental benefit. Some Members of the Committee cite the willingness of certain electric power utilities to install scrubbers as proof of their value. I disagree. Any electric utility which installs a scrubber expects to pass the costs on to its customers. It does not pay, they do. And, once the equipment is installed, it is too late to discover that it will not work. The capital cost will already be included in the utility rate base and added on the consumer's monthly bill. Even if the equipment is later shutdown, the consumers will still have to pay for it.

The same problem exists if the present scrubber designs are found to be obsolete—either through improved designs or new scientific evidence requiring stricter controls of sulphur oxides. Once the utility is committed to a scrubber, its customers will have to pay for it.

This then, poses a serious question. If the electric utility industry is forced to buy the present scrubber designs, what incentive is there to develop designs that actually work? The utility's inclination would be to resist any new technology, until the present scrubber is paid for. In addition, many utilities have decided to order low sulphur coal in order to reduce  $\text{SO}_2$  emissions. If, however, they are required to purchase a scrubber in addition, under the BACT requirement of the Committee report, then the inclination may be to use a lower cost, higher sulphur coal. The end result could be a power plant with a scrubber emitting more  $\text{SO}_2$  than the original design without a scrubber.

#### AUTOMOBILE EMISSION STANDARDS

The Committee report is one-sided and distorted in its discussion of the various studies and findings of the National Academy of Sciences, regarding automobile emission standards. I believe that some additional discussion of these findings would be helpful for the purpose of evaluating the final decision of the Committee.

With regard to the relationship between automobile emission standards and ambient air quality, the Academy found that:

With certain important provisos:

- (a) The federal ambient air quality standards for carbon monoxide could be met by 1990 even with some relaxation of the present statutory emission standards.

(b) The Federal emission standards of 0.4 grams per mile for  $\text{NO}_x$  may be somewhat more stringent than is needed to achieve the ambient air quality standard for  $\text{NO}_2$ .

(c) The existing analyses relating  $\text{NO}_x$  emissions to subsequent oxidant formation are considered inadequate. It is not certain that the ambient air standards for oxidant would be met in all large cities or locations downwind from cities if the  $\text{NO}_x$  emissions standards were relaxed.

(d) At least in the Los Angeles area, the Federal statutory hydrocarbon emission standard of 0.41 grams per mile may not be sufficiently stringent to ensure compliance with the national ambient air quality standards for oxidant. However, present analyses are inadequate to justify changes in Federal motor vehicle emission standard for hydrocarbon at this time.

In evaluating the particularly severe  $\text{NO}_x$  problems of Los Angeles, in relation to the present emission standards, the Academy's calculation "suggests that the current Federal statutory  $\text{NO}_x$  automobile emission standard of 0.4 gram per mile may be somewhat stringent for meeting the Federal ambient air quality standard for  $\text{NO}_2$  in Los Angeles."

The Academy also evaluated various technological approaches under development in the United States for reducing automobile emissions, including the diesel engine (now in production in Europe), the direct fuel-injection stratified-charge engines with oxidizing catalyst, the lean-burn systems with thermal reactors, and the prechamber dual-carburetor stratified-charge (CVCC) engine with thermal reactor (now in production in Japan). The Academy's conclusion was that these systems could meet the statutory standards for HC and CO, as well as standards for  $\text{NO}_x$  "at least as low as 1.5 gram per mile". The Academy also concluded that "the 0.4 gram per mile  $\text{NO}_x$  level mandated by the Federal 1978 Emissions Standard is expected to inhibit the development of these technologies".

In evaluating the present Federal 1978 Emissions Standard of 0.41 gram per mile for HC, 3.4 gram per mile for CO, and 0.4 gram per mile for  $\text{NO}_x$ , the Academy concluded that it "can probably be achieved in EPA certification procedures on the existing schedule using catalyst technologies". The Academy, however, further qualified this conclusion by stating:

"Since no catalyst system has yet achieved 50,000-mile durability and only a few have achieved more than 10,000 miles under laboratory conditions, there is considerable chance that one or more catalyst changes will be required in 50,000 miles as part of the manufacturer's specified maintenance. A typical cost to the customer per change could be as low as \$50 if only the active material is replaced but might be as much as \$300 with some of the systems currently under study. If one assumes, as we have, that a concerted, development effort will result in sufficient improvement in catalyst durability to make catalyst changes unnecessary, then an average increase in vehicle lifetime cost of about \$600 over 1970 vehicles is expected, including a fuel-economy penalty of up to 10 percent, depending on the technologies actually used.

With regard to catalyst systems, there still exists a very serious potential health hazard relating to emissions of sulphuric acid and fine metal particles from automobiles equipped with such devices. There is a considerable variance in opinion on this problem, but I believe that the specter of millions of catalyst-equipped automobiles emitting sulphuric acid mists, particularly in dense urban areas during periods of atmospheric inversion, is sufficiently disturbing to warrant increased interest in alternative emission control systems. It would be indeed ironic if the Federal Emissions Standard, established by Congress and EPA during 1970 and 1971, would be responsible for preventing alternative technology and thereby subject the human environment to deadly concentrations of sulphuric acid or other as yet unknown products of catalyst operation.

The Committee report also mentions the relationship between emissions control and fuel economy. There does exist conflicting opinion about the exact percentage of fuel economy loss due to emission control requirements, but the basic fact remains that there is an inherent decrease in fuel economy directly related to existing emission controls.

Here again the problem can be traced to the Congressional decisions which forced adoption of the catalytic converter. With use of the converter necessitated by Congressional and EPA actions, it then became necessary to mandate the use of unleaded gasoline, so as to not effectively destroy the converter's oxidizing capabilities. This requirement for unleaded fuel, then, led to the necessity for reducing the compression ratio of the internal combustion engine, in order to avoid possible engine damage from autoignition, usually referred to as "engine knock". Reduction of compression ratio directly reduces the engine's thermal efficiency, thereby increasing fuel consumption.

Any claims of fuel economy increases as the result of using the catalyst must be set in the context of the disastrous drop in fuel economy caused by pollution controls added to the internal combustion engine. The truth cannot be ignored, no matter how much some may desire it. And the truth is that pollution controls have caused a loss of fuel economy.

During Committee hearings on automobile emissions, beginning early in 1973, I have repeatedly expressed my concern about the negative aspects of the catalytic converter, and have urged that our Committee decisions take into account the necessity for developing alternative emission control technologies. This development is necessary for economic, energy conservation, and—most important—health reasons. Unfortunately, my position was not supported by either EPA or General Motors. Both insisted on the unreasonable schedules established earlier, thereby forcing adoption of the catalytic converter. General Motors' position was most likely due to the fact that it had a competitive advantage in catalyst technology, whereas other manufacturers had moved further ahead in development of more promising alternative engine designs. EPA's motivation is less clear. It should be a matter of continuing investigation by the Congress as to why the Federal agency responsible for protecting human health from air pollution ignored scientific evidence concerning the threat of emissions from catalyst-equipped automobiles. It was not until March 5, 1975, that EPA finally officially recognized the inherent dangers of

sulphuric acid emissions from these vehicles. As the EPA Administrator said, these sulphuric acid emissions "represent a risk to public health".

During the Committee's deliberations, I offered an amendment to the automobile standards provision, which I believe provided significant advantages over both the Administration request for a straight extension and the Committee proposal. Essentially, I recommended continuation of the 1975-76 standards through model year 1979. For 1980 and 1981, I recommended standards of 0.9, 9.0, and 1.5 grams per mile for HC, CO, and NO<sub>x</sub>, respectively. Then, beginning in 1982 and continuing beyond, the present standards of 0.41, 3.4, and 0.4 would be mandated. But, the key to my recommendation was the provision for periodic Congressional review of the standards and timetables. Specifically, I would have required that both EPA and the National Academy of Sciences conduct separate and independent analyses of the HC, CO, and NO<sub>x</sub> standards, to be completed by December 31, 1977. The Congress, then, would review these studies, before July 31, 1978, and make any necessary changes. This concept of intermediate steps with required Congressional review would have encouraged the development of alternative emission control strategies and improved technology, something which cannot be achieved with unreasonable standards and schedules. There are two major advantages of this approach: Congress would have the advantage of the improved scientific information becoming available on the relationships between automobile emissions, ambient pollutant concentrations, and human health, and, secondly, we would not be abandoning the original goals set forth in 1970. At the present time, our scientific information is inadequate for deciding the validity of these goals. There is evidence that they are too stringent and there is evidence that they are not stringent enough. The Congress should commit itself to a final determination, and not just keep up this "environmental brinkmanship", whereby we wait until the last possible moment before making decisions.

The impact of such a procedure is extremely serious, especially when considering the relationship between human health and the market acceptance of new automobiles. The greatest advances to be made during the next few years in the area of automobile emissions is through the replacement of older, dirtier cars with newer models. The Congress has not yet resorted to ordering of people to trade in old cars—a move I would strongly oppose—so the marketplace is still the final judge of the rate of replacement. If the Congress requires automobiles to be built which the public will not buy, then the impact on industry, labor, and the economy will be explicitly evident. The adverse impact on air quality, particularly in the urban areas, would be less evident immediately, but would become more so within a short number of years.

There is an automobile related provision in the Committee report, concerning transportation controls, which discusses the authority of EPA to withhold grant funds in the event a State fails to apply for an extension. The withholding of funds provided by Congress for doing a job is not a proper tool for achieving compliance. If a State is not complying, then there already exists legal procedures for correcting this problem.

## AUTOMOTIVE WARRANTY REQUIREMENTS

During the Committee's deliberations, I supported an amendment to change the performance warranty requirements to 18 months or 18,000 miles. I believed then, and still believe, that the change is necessary to prevent a government-granted monopoly to the major automobile companies for replacement parts and repairs on new cars. The individual car owners should have the right to decide who will perform service and repair work on their vehicles, and not be forced to return to the manufacturer. One of the reasons for the Committee's concern about the automotive provisions of the existing Act is the future survival of automobile manufacturers, together with the millions of direct and indirect jobs involved. I believe that this same concern should extend to the independent service stations, repair shops, and parts dealers.

JAMES A. McCLURE.

## INDIVIDUAL VIEWS OF SENATOR DOMENICI

My views are supplemental in the literal sense. I support the bill in its entirety, and with limited exceptions, voted in favor of every provision. I do, however, feel that the report can be profitably augmented in several areas.

The first of these areas is that the report fails to fully address the major issue that faced the Committee during its deliberations: how to strike a reasonable balance between the Nation's environmental and economic needs. A major portion of the 1976 Clean Air Act amendments concern economic issues. Nondegradation, transportation control plan and stationary source extensions, the land use and supplemental control amendments, the coal conversion amendment, and the expansion in air quality maintenance area amendment, all have as their nexus the issue of how to mesh the demands of a complex highly industrialized society with the need to protect the public health and the eco-systems that support man.

The report's reticence on such a fundamental topic does an injustice to the amendments. Personally, I believe the amendments represent a good faith effort on the part of the Committee to wrestle with this difficult issue. Ideal solutions are obviously impossible. But the Committee has considered the competing claims of both economic growth and public health and attempted to strike a judicious balance.

In the interim between completion of the Committee's deliberations on the bill, and the filing of the report, I have had the opportunity to address this subject at greater length in a law review article that will appear in the Notre Dame Law School's Journal of Legislation. Because of its length, I would like to incorporate the article by reference as my full views on this subject. In addition, since publication will occur after consideration of the 1976 Clean Air Act amendments by the Senate, a draft of the article will be printed in the March 22, 1976 "Congressional Record."

Another shortcoming of the report relates to its discussion of an amendment that I authored that legalized supplemental control systems in certain circumstances. The failing concerns the report's discussion of the inter-relationship of the Committee's actions in allowing the use of supplemental control systems for *existing* nonferrous smelters and its adoption of the definition of emission limitations. The two actions can be reconciled by carefully distinguishing intermittent control systems and supplemental control systems; the basic difference being that supplemental control systems, in contrast to intermittent systems, use reasonably available continuous controls as a precondition to the employment of strategies such as production curtailments to meet the ambient standards.

Unfortunately, the report's discussion of this issue suffers from some imprecision. One problem lies in the report's use of the word "dispersion" in the discussion on emission limitation. Both intermittent

and supplemental controls are dispersion strategies. The report's use of the word dispersion to cover a pair of strategies that the committee has statutorily distinguished only serves to confuse the issue. Substitution of the word intermittent for the word dispersion in the emission limitation discussion would bring the report in closer accord with the express language of the amendments which clearly legalizes supplemental dispersion strategies for existing nonferrous smelters. Since the amendments defining emission limitation and legalizing supplemental controls were extended to codify existing administrative practice and case law, the Committee report could have profited by a reference to the EPA position paper on the matter found at 41 Fed. Reg. 7450 (Feb. 18, 1976). Here EPA lays out the technical and economic considerations that go into determining what constitutes reasonably available technology. Moreover, the report's discussion on the enforceability of supplemental control systems would have been enhanced by a reference to the National Academy of Science's discussion on the subject. The Academy's report carefully establishes under what conditions a supplemental system becomes enforceable (see, *Air Quality and Stationary Source Emission Control*, NAS, March 1975, pp. 522-34).

In contrast to the amendment on supplemental controls, which as its author I feel free to speak on with some finality, the Committee's decisions on nondegradation and automobile standards reflect the input of many of the members. And although many of us reached the same conclusion, we had different reasons for reaching the final result. With respect to nondegradation, and automobiles, my reasoning is laid out in detail in my previously mentioned law review article. I would, however, like to augment these reasons in light of the report.

When the Committee began its considerations of the nondegradation issue, I for one did not feel it was as clear as the report indicates that a nondegradation strategy was firmly embedded in existing law. The Supreme Court had affirmed a lower court decision on the matter by the unconvincing vote of 4-4. No opinion was written by the high court. Moreover, EPA regulations were being challenged in the courts on a variety of grounds. The matter appeared to be up in the air, begging for congressional action. In proposing in this bill a nondegradation policy for the Nation, I feel the Committee has taken a bold step forward, not merely put its seal of approval on an existing state of affairs. In addition, by strictly limiting the Federal interest to major emitting sources, although States remain free to regulate nonmajors if they wish, the Committee has avoided thrusting the Federal presence into every decision on economic growth taken at the local level. Nevertheless, we recognize the sweeping impact of the nondegradation amendments and have provided a feedback mechanism in the form of a National Air Quality Commission to keep us advised of how well the law is working in practice. I would expect the Commission to forward us recommendations on how the law can be improved if changes are needed.

On the issue of the automobile emission standards, the report at several points states in unqualified terms that technology is available. This issue was the subject of much dispute. For me, the case for a short delay was made by the vendors of the automobile pollution control technology themselves. Gould, the builder of the promising dual

catalyst for controlling nitrogen oxides, admitted that its catalyst required low sulfur fuel, generally unavailable (see part 3 of the committee hearings, p. 262). Durability data submitted by Engelhardt showed that its three-way catalyst was not yet able to meet the statutory standards (part 3, pp. 163-64). My vote for final compliance by 1980 was based upon my belief that proven technology is in the process of emerging, but not ready for introduction in 1978 model year automobiles.

It is my belief that in the 1976 amendments, the committee reaffirmed the basic policy goals of the Act. The fact that this was done while explicitly addressing critical economic and energy issues argues for the strength of these amendments, not their weakness. I believe that they are a credit to the Public Works Committee's membership and will serve the Nation well.

PETE V. DOMENICI.

## MINORITY VIEWS OF SENATOR HART

My opposition to the proposed Committee amendments to the Clean Air Act are predicated on the conviction that these amendments will not achieve the goals set out in the Clean Air Act: "to protect and enhance the quality of the Nation's Air resources so as to promote the public health and welfare and the productive capacity of its population."

On the contrary, these proposed amendments will impede efforts to maintain and improve the quality of our air, to the detriment of public health and welfare.

Since passage of the 1970 Clean Air Act, we have learned a great deal about improving and maintaining air quality. We can and should draw on this experience to revise the existing law and make it a more workable basis for environmental policy. I do not quarrel with the need to revise current deadlines and standards. In some areas, however, the Committee's proposed amendments to the Clean Air Act strike an uneven balance between technological and economic feasibility and concern for public health.

In reaching its decision, the Committee has weighted too heavily on industry claims that strict standards will adversely affect business profitability and the economy.

Relaxing clean air standards is at best an ineffective weapon against inflation and unemployment. Relaxing air quality standards to the detriment of public health and safety misplaces our national priorities. Certainly Congress has at its command more effective tools to deal with national economic problems.

Relaxation of air quality standards may increase profitability of some individual companies or industries. However, an accurate accounting of the economic gains and losses to society will show a net loss. The social costs of pollution are real. They are not reflected on industry balance sheets. But citizens and taxpayers pay them nonetheless.

The proposed Committee amendments can and must be strengthened in three areas. First, automobile emissions standards should be revamped to require earlier deadlines and stricter standards. Next, Congress should establish stronger limitation on the nonessential use of halocarbons in aerosol sprays. Third, protection of air quality over federally-owned land must be improved to insure no significant deterioration.

### AUTOMOBILE EMISSIONS STANDARDS

The Committee proposal makes two critical changes in the automobile emissions standards: it delays once again the time deadlines for compliance and substantially lowers an important emission standard, the nitrogen oxides standard. While some relaxation of emission standards may be necessary, the Committee's extensive revisions can-

not be justified by the evidence compiled in more than 56 days of hearings and 48 markup sessions.

Specifically, the Committee's proposed amendments delay full implementation of the original statutory emission standards for hydrocarbons (HC) and carbon monoxide (CO) until 1980.

Second, the amendments will allow more than double the emissions of nitrogen oxides ( $\text{NO}_x$ ) allowed under current law and will not even require full implementation of this relaxed standard until 1980.

In 1970, Congress directed the Environmental Protection Agency (EPA) to contract with the National Academy of Sciences to conduct a comprehensive study of automobile emissions, and to produce an unbiased technical evaluation of the feasibility of meeting emissions standards required to protect public health. By delaying implementation of standards for HC and CO, and indefinitely relaxing the 0.4  $\text{NO}_x$  standard, the Committee is ignoring the authoritative National Academy of Sciences reports issued in 1974 and 1975.

The Committee defends its proposal for relaxing and delaying auto emissions standards citing concern for economic and technological feasibility, concern for fuel economy, and considerations of public health. The facts do not support these arguments.

#### TECHNOLOGICAL AND ECONOMIC FEASIBILITY

There is no dispute that hydrocarbon (HC) and carbon monoxide (CO) standards established in the 1970 Clean Air Act amendments are vital for the protection of public health. Even though the majority report recognizes that both the National Academy of Sciences and the EPA have found that the HC and CO standards could be met on the schedule set forth in the current law, the Committee voted a further delay. The Committee apparently accepted industry arguments that compliance was economically and technologically not feasible. However, the National Academy of Sciences, rather than recommending a delay of hydrocarbon or carbon monoxide standards, stated unequivocally that it was both feasible and desirable to meet the existing statutory standards on schedule.

In its June 5, 1975, report on automobile emissions, the National Academy of Sciences stated:

Emission standards for HC and CO (0.41 and 3.4 gm/mi) for 1978 and subsequent model year light duty vehicles should be maintained at the current statutory levels. Attaining these levels by 1978 is both feasible and worthwhile.

The committee, by permanently relaxing the current statutory emission standard for nitrogen oxides ( $\text{NO}_x$ ) is again ignoring the advice of the National Academy of Sciences. The Academy's June 1975 report concludes that it is indeed feasible to meet the current  $\text{NO}_x$  emission standard using present catalyst technology. The report further states that, "if the standard for  $\text{NO}_x$  (0.4 gm/mi) is relaxed, a two-car strategy should be implemented." This strategy would require vehicles that are registered or used in areas with more severe pollution problems must meet the 0.4 gm/mi standard while cars in areas that do not have pollution problems would only be required to meet a less stringent standard. The Committee's proposal to permanently relax the  $\text{NO}_x$  standard will eliminate the possibility of using this pollution control strategy in the future.

Nitrogen oxide emissions control presents a technological challenge; but, as the majority report recognizes the automotive industry has made an inadequate effort to meet the statutory standards for oxides of nitrogen.

The National Academy addressed this issue in its June 1975 report stating:

It is probably feasible with catalyst technology to achieve the statutory emission standard for  $\text{NO}_x$  (0.4 gm/mi) in 1978. There would be less uncertainty today if there had not been a slackening effort in pursuing this goal.

Yet, the proposed Committee amendments reward the automobile industry for its half-hearted effort to meet this crucial emission standard by relaxing the standard and delaying its implementation until 1980.

The Committee's proposed revision of the automobile emissions standards are disturbing also because they propose to postpone, for several years, emission standards the industry claims it can't meet when these same standards are virtually being met by many cars on the road in California today.

EPA certification data for 1976 cars show 12 makes of cars already on the road that meet, or nearly meet, standards the Committee would not require until 1980. One cannot convincingly argue that Detroit needs three more years to develop the technology to meet the proposed Committee standards. Some examples of EPA emission tests on 1976 models are listed in table I:

TABLE I.—EPA CERTIFICATION DATA FOR 1976 CALIFORNIA CARS

Manufacturer and model Engine		Weight	HC	CO	$\text{NO}_x$
GM—Chevette	85 4 cylinder	2,250	0.47	5.84	0.81
Ford—Pinto	140 4 cylinder	3,000	.20	2.80	.90
Peugeot—504D	Diesel	3,500	.42	1.40	.95
Ford—Comet	302 V-8	3,500	.64	5.08	.91
GM (Buick)—Skyhawk	231 V-6	3,500	.59	5.12	1.20
AMC—Gremlin	304 V-8	3,500	.32	3.91	1.14
Ford—Ranchero	341 V-8	4,500	.35	3.69	.97
GM—Chevelle—Malibu	400 V-8	4,500	.39	2.88	1.28
AMC—Matador	V-8	4,500	.43	3.79	1.45
Chrysler—Chrysler	440 V-8	5,500	.31	2.07	1.49
GM—Cadillac	500 V-8	5,500	.62	6.74	1.26
Proposed standard in 1980			.41	2.4	1

The Committee report states that the major reason for relaxing the statutory  $\text{NO}_x$  standard from 0.4 gram per mile to 1 gram per mile was to expand the technological options available to the industry. The evidence before the Committee does not support this argument. The National Academy of Sciences identified five technologies which could meet the Committee's proposed relaxed standard. More important, the Academy found that four of these five technologies could also meet the stricter 0.4 statutory standard (see table II). According to the study, only one design option, the diesel engine, may be precluded as an industry option if the stricter 0.4  $\text{NO}_x$  standard is maintained. Interestingly, a study made by the EPA and the Department of Transportation<sup>1</sup> shows that diesel engines meeting the 0.4  $\text{NO}_x$  standard have been built. Thus, even the diesel engine option

<sup>1</sup> "Study of Potential for Motor Vehicle Fuel Economy Improvement" January 1975. Department of Transportation, Environmental Protection Agency.

may be available if the 0.4 NO<sub>x</sub> standard is maintained. The Committee is incorrect in concluding that allowing greater nitrogen oxide pollution will significantly increase technological options.

Higher consumer costs, lower sales and manufacturer profits leading to increased unemployment, are arguments frequently used to justify relaxing and delaying auto emission standards. The facts before the Committee do not provide sufficient justification for relaxing the emission standards on these grounds. The Committee's relaxation of the existing standards will not result in significantly lower automobile sticker prices. The National Academy of Sciences has shown that the cost of meeting current statutory standards is virtually the same as the cost of meeting the relaxed standards suggested by the Committee for 1980. The Academy, in its June 1975 report, provides substantial documentation of this fact.

The Committee's report lists National Academy of Sciences cost comparisons which show the cost, with today's catalyst technology, of meeting the Committee's proposed relaxed standards. These 1980 costs would be \$44 to \$203 more than for meeting the 1975 standards. However, the complete Academy tabulation also lists four additional technologies that can meet the current statutory standards for only \$92 to \$299 more. These data were not included in the Committee report.

TABLE II.—COMPARATIVE EMISSION CONTROL COST DATA FOR VARIOUS SYSTEMS AND EMISSIONS<sup>1</sup>

[Levels based on intermediate 6-cylinder vehicles]

Emission level and vehicle system	Miles per gallon	Increase in lifetime cost				Dis-counted life total
		Sticker price	Fuel	Maintenance	Total	
Fed. 1970 3.9/33/6 (base).....	13.2	0	0	0	0	0
Fed. 1973-74 3.0/28/3.1 (modified).....	12.1	\$51	\$296	\$325	\$672	\$557
Fed. 1975 1.5/15/3.1:						
Modified conventional.....	12.4	78	210.	325	613	512
Oxidation catalyst.....	13.5	123	76	100	298	265
Senate 1980 0.4/3.4/1.0:						
Dual catalyst.....	12.9	249	230	75	554	500
3-way catalyst.....	13.5	326	75	12	413	398
CVCC stratified-charge.....	12.2	209	267	200	676	575
CCS stratified-charge.....	14.5	273	-499	38	-188	-111
Diesel.....	15.0	167	-458	-25	-316	-234
Current statutory standards 0.4/3.4/0.4:						
Dual catalyst.....	12.3	331	401	75	807	724
3-way catalyst.....	13.2	377	151	38	566	531
CVCC.....	10.6	215	799	225	1,239	1,057
CCS.....	13.3	273	-251	38	60	94

<sup>1</sup> NAS Report of the Conference on Air Quality and Automobile Emissions, June 5, 1975.

While it is difficult to predict exactly how increased prices will affect car sales, evidence over the past decades indicates that the general state of the U.S. economy, not the price required for safety equipment or emission control devices, is the most important factor affecting car sales.

Furthermore, the American public seems willing to pay increased prices for better air quality. In an August 1975 survey made by the EPA, consumers indicated a strong preference for cleaner air. When asked, "Do you think it is better to permit present levels of air pollution from cars or to charge \$250 per car to clean the air by another 10 percent?"—the public chose higher prices and cleaner air by a two-to-one margin (48 percent to 24 percent).

## FUEL ECONOMY

It has also been argued that automobiles cannot meet the existing statutory emissions standards without sacrificing a new and important national goal: improved fuel economy.

Nevertheless, there is persuasive evidence that it is perfectly possible to meet the dual goals of reduced pollution and improved gasoline mileage. The Environmental Protection Agency has concluded that there is no inherent relationship between exhaust emission standards and fuel economy.

The National Academy of Sciences found that existing statutory standards "could and should be achieved while improving fuel economy. A significant improvement (in fuel economy) can be achieved by changes that are independent of the level of emissions."

A similar conclusion was reached in a \$500,000 study funded by the industry and performed by the California Institute of Technology's Jet Propulsion Laboratory (JPL). In its report, "Should We have a New Engine?" the JPL concluded that the conventional engine could meet the existing statutory emissions standards and make a 10 percent gain in fuel economy.

## IMPACT ON PUBLIC HEALTH

The Committee justifies its relaxation of the ultimate  $\text{NO}_x$  standard by noting that the 0.4 standard is more stringent than is needed to achieve the ambient air quality standard for  $\text{NO}_x$  as measured in terms of yearly average levels of pollution. But, evidence is increasing for the need for a new short-term nitrogen oxide air quality standard to protect public health from peak rush-hour concentrations of nitrogen oxides. The dangers of rush-hour concentration levels has only recently been considered by health authorities. The National Academy of Sciences and the EPA now both recognize a need for a short-term exposure standard to protect the public in metropolitan areas. Foreign countries have already adopted this approach. In particular, Japan has a short-term air quality standard for  $\text{NO}_x$  which is much more stringent than the current U.S. annual average standard.

The Committee's relaxation of the  $\text{NO}_x$  emission standard will make it almost impossible to lower rush-hour exposure to this health hazard in many metropolitan areas. For example, Denver is now safely meeting the annual average nitrogen oxides standard. However, during rush-hour conditions, the city repeatedly violates short-term public health based nitrogen oxides standards urged by Dr. Carl Shy of the National Academy of Sciences, and others, as necessary to protect public health. From December, 1972 through September, 1974, nitrogen oxides levels exceeded recommended one-hour standard 56 times. During the month of January 1974 alone, recommended two-hour levels were exceeded 218 times in Denver.

One demonstration of the adverse health impact of the Committee's proposed relaxation of the 0.4  $\text{NO}_x$  standard is contained in a recent EPA analysis. The EPA estimates that the relaxed standard will result in a significantly higher incidence of respiratory disease in children.

The proposed replacement of the 0.4  $\text{NO}_x$  standard by a 1.0  $\text{NO}_x$  standard will cause a 20 percent increase of lower respiratory disease

attacks in children.<sup>2</sup> To protect public health against this threat, the 0.4 NO<sub>x</sub> standard should be retained as an ultimate standard.

Moreover, in a number of studies conducted during the past six years, it has been found that increasing NO<sub>x</sub> levels have been statistically related to increasing cancer deaths in 38 U.S. cities. One study, the September 1974 National Academy of Sciences report on "Air Quality and Automobile Emission Control" (Vol. 2), stated the following: "The consistent relation postulated by Hickey between cancer death rates and nitrogen dioxide is of enormous potential importance."

## OZONE PROTECTION

The Committee's proposals for ozone protection place the administrative burden on the wrong party. The evidence is overwhelming that certain chemicals (halocarbons) used in aerosol spray cans and in the refrigeration industry cause significant changes in the earth's upper atmosphere. These changes, in turn, cause increases in human skin cancer and other forms of mutation and may significantly affect agricultural food production, climate, and most forms of animal and plant life on the earth's surface.<sup>3</sup> Since, in virtually all cases, harmless or alternative dispensing techniques are already available, most aerosol uses of fluorocarbons are nonessential.

<sup>2</sup> Panel on Air Quality, Noise and Health Draft report to the Task Force for Motor Vehicle Administration, October 20, 1975.

<sup>3</sup> See following table of "Recent Reports and Studies of Halocarbons and Ozone Depletion Issue":

### RECENT REPORTS AND STUDIES OF HALOCARBONS AND OZONE DEPLETION ISSUE

February 1973	-----	The National Academy of Sciences report: <i>The Biological Impacts of Increased Intensities of Solar Ultraviolet Radiation</i> .
December 1974	-----	Department of Transportation report on the Climatic Impact Assessment Program, entitled <i>The Effects of Stratospheric Pollution by Aircraft</i> .
April 1975	-----	The National Academy of Sciences report: <i>Environmental Impact of Stratospheric Flight</i> .
May 1975	-----	Federal Council for Science and Technology report: <i>The Possible Impact of Fluorocarbons and Halocarbons on Ozone</i> .
June 1975	-----	Report of the Federal Task Force on Inadvertent Modification of the Stratosphere (the IMOS report): <i>Fluorocarbons and the Environment</i> .
June 1975	-----	National Bureau of Standards report entitled <i>Chemical Kinetic and Photochemical Data for Modelling Atmospheric Chemistry</i> .
July 1975	-----	Interim report on the National Academy of Sciences Panel on Atmospheric Chemistry:
September 1975	-----	Environmental Protection Agency report: <i>Preliminary Economic Impact Assessment of Possible Regulatory Action to Control Atmospheric Emissions of Selected Halocarbons</i> .
September 1975	-----	Seven days of Hearings by the Senate Aeronautical and Space Sciences Ad Hoc Subcommittee on the Upper Atmosphere.
November 1975	-----	State Department report: <i>The International Aspects of Halocarbon Regulation</i> .
November 1975	-----	National Aeronautics and Space Administration: <i>The NASA Plan for Research in the Upper Atmosphere</i> .
December 1975	-----	National Cancer Institute report: <i>Measurements of Ultraviolet Radiation in the United States and Comparisons with Skin Cancer Data</i> .
December 1975	-----	Environmental Protection Agency: <i>Report on the Problem of Halogenated Air Pollutants and Stratospheric Ozone</i> .
February 1976	-----	Two days of hearings by the Senate Aeronautical and Space Sciences Ad Hoc Subcommittee on the Upper Atmosphere.
February 1976	-----	National Science Foundation: <i>Report of the IMOS Subcommittee on Biological and Climatic Effects Research</i> .

It is therefore imperative that Congress take strong steps at this time to eliminate the use of halocarbons in *nonessential* aerosols to reduce a growing danger to human health, agriculture and our natural environment.

The Committee proposes to give the Administrator of the Environmental Protection Agency the authority to curtail the nonessential uses if, after a lengthy administrative process, he determines there may be a threat to human health and welfare. This procedure puts a cumbersome administrative barrier in the way of protecting human health. In light of the magnitude of the threat and the weight of current evidence, Congress should establish a limitation on the nonessential use of halocarbons and give the Administrator the authority to modify that limitation if, at some future date, he conclusively determines there is no significant risk to public health and welfare.

For nonessential uses of halocarbons, doubts must be resolved in favor of the protection of public health. The burden of proof must lie with the manufacturers to prove there is no serious danger. As the Committee report states, depletion of the ozone layer is a danger of such magnitude that it is wise to err on the side of caution to insure the protection of public health and welfare.

We now have every scientific reason to believe that halocarbons do deplete the ozone layer. This ozone depletion will result in more solar ultraviolet radiation reaching the Earth's surface, which will have extensive adverse effects on public health and environmental quality.

The risks in this case are of such magnitude that they far outweigh the trivial benefits derived from continued indiscriminate nonessential release of halocarbons.

It is the enormous magnitude of the danger presented by ozone depletion that distinguishes the halocarbon ozone depletion problem from the other problems treated by the Clean Air Act amendments.

Skin cancers are one of the major dangers of ozone depletion. A 1-percent decrease in ozone results in approximately a 2-percent increase in the incidence of skin cancer, or about 30,000 additional cases per year worldwide. Recent estimates predict an even greater number of cases.

It has been suggested that we simply freeze halocarbon production at current levels and devote further study to the problem. Were we to do this, the ozone shield eventually would be depleted by about 10 percent. Conservation estimates predict that this would result in approximately 500,000 additional cases of skin cancer per year, \$250 million in additional medical treatment costs per year, and 7,500 additional deaths per year due to skin cancers alone. These are costs that we cannot afford to pay.

However, the most significant threat posed by continued ozone depletion lies not in the direct effect on human skin of increased ultraviolet radiation, but rather in its effects on the rest of animal and plant life. If necessary, people could wear additional protective clothing and spend less time outdoors to avoid increased exposure to ultraviolet radiation. But cattle, for example, which get "pink eye" and "cancer eye" from exposure to ultraviolet radiation, don't have the same alternatives available to man.

Plants are also threatened because some can barely tolerate the relatively small amount of ultraviolet radiation which normally manages to filter through the ozone shield. Others, including important agricultural crops such as cotton, peas, and soybeans, have been found to be sensitive to ultraviolet damage.

However, the potential adverse effects on agriculture of increased ultraviolet radiation go far beyond this. Recent experiments suggest, for example, that both the stability and effectiveness of many agricultural chemicals are decreased by ultraviolet radiation. Similarly, the behavior patterns of many insects, including those beneficial to agriculture, are highly dependent on ultraviolet radiation for, unlike humans, insects see the ultraviolet spectrum. Although the precise nature of such behavioral changes has not been thoroughly explored, there is every reason to believe that the net effects would be both significant and detrimental.

Of even greater concern is the possibility that halocarbons in the atmosphere might indirectly precipitate significant climatic changes, including changes in temperature, wind patterns, precipitation, and other weather elements. Again, the nature and extent of these changes cannot be predicted on the basis of present knowledge, but we do know enough to realize that the potential for significant climatic effects does exist.

In sum, the possible, and in many cases probable, effects of increased ultraviolet radiation span virtually the entire range of aquatic and terrestrial ecosystems, from microscopic bacteria to man. Scientists haven't yet specifically identified every last possibility, but the general picture they paint is clear. Their concern is reflected in the fact that most of the atmospheric scientists testifying before the Senate Subcommittee on the Upper Atmosphere have asked for an immediate ban on nonessential aerosol uses.

What we have to weigh in reaching a decision regarding the regulation of halocarbons is the potential magnitude of the dangers on the one hand, and the benefits derived from or associated with halocarbon emissions on the other. Approximately one-half of the halocarbons produced are used as propellants in aerosol containers for dispensing personal care products, especially, hairsprays, deodorants, and antiperspirants. For most of these uses, alternative propellents or mechanisms can be employed. And in any event, convenient hairsprays and deodorants just aren't worth taking the risks associated with high levels of ultraviolet radiation.

The evidence against halocarbons is now compelling and the predicted effects represent nothing less than a whole series of potential dangers, for both man and the human and natural environment.

A major problem has been clearly identified. We should read the handwriting on the wall and ban the nonessential uses of halocarbons before this problem becomes a crisis.

#### NO-SIGNIFICANT DETERIORATION

The Committee's no-significant deterioration proposal provides a basically sound footing upon which to build an environmental policy to protect areas of the country where air quality is better than the

current national standards. However, the Committee's provision for protecting air quality over federally owned lands should be strengthened. We must enact an amendment which not only protects areas which have been set aside to preserve their natural state but also provides for maximum recovery of valuable energy resources with minimum deterioration of air quality.

Many areas of this country have been set aside as national treasures. National parks, national wilderness areas, national monuments and recreational areas, wild and scenic rivers are examples of such areas. Their creation evidences a national decision to preserve certain lands in their natural state for all future generations to enjoy.

The Committee's amendments should be strengthened to provide for increased Federal control of air quality over these areas. This can be done without involving the Federal Government in local land-use decisions on surrounding non-Federal lands.

Two aspects of the Committee's proposal can and should be strengthened. First, the procedure for designating air quality standards starts with an initial presumption that most Federal lands should be classified Class II, allowing considerable deterioration in air quality. This presumption encourages deterioration. Federal lands set aside to preserve their natural state should be initially designated Class I.

Second, the Committee's requirements for the use of pollution control technology (Best Available Control Technology: BACT) is so broad that loose interpretation could allow the construction of facilities that emit substantial amounts of pollution. This in turn would preempt sound development of vital resources. The requirements for BACT in plants that affect Federal lands should be strengthened.

#### PROCEDURE FOR CLASSIFYING FEDERAL LANDS

As outlined above, the essence of a no-significant deterioration policy should be to protect areas that have been set aside to preserve their natural state. The Committee's procedure for classifying many categories of such Federal lands (national monuments, national recreation areas, wild and scenic rivers, national forests) will allow and encourage deterioration of air quality in these areas and is antithetical to the concept of nondegradation. Under the Committee's proposal, all of these lands, regardless of whether they have been set aside to preserve their natural state, are initially designated Class II areas, allowing substantial development and deterioration of air quality.

Under the Committee's proposal, these areas can be upgraded to Class I protection status only if both the State and Federal Government agree on redesignation. By requiring joint agreement for upgrading the protection statutes, the Committee places a cumbersome administrative impediment in the way of preservation. In effect, the State and Federal governments each have a veto power over the other's efforts to protect those national areas. This procedure is inconsistent with the basic concept of preventing significant deterioration. The initial presumption in the past has been that natural areas should be preserved. If national and local interest indicate an area should be allowed to deteriorate, the burden should rest on those advocating degradation of air quality, not on those attempting to save natural areas.

Our national commitment to preserve natural Federal lands would be better served if all Federal lands that have been set aside to protect their natural State were initially given the protection of Class I status. Federal and local authorities could then determine if it were in the public interest, both locally and nationally, to reclassify these areas and permit further deterioration of air quality.

#### CONTROL TECHNOLOGY REQUIRED OF NEW FACILITIES IN PRISTINE AREAS

As outlined in the Committee report, a major purpose of a non-degradation policy is to permit the maximum development desired by the local community but with the minimum damage to the environment.

Since the air can absorb only a fixed amount of pollution without causing environmental damage, the best strategy is to insure that each new facility employs the most effective air pollution control equipment.

Without this protection, a single "dirty" facility may lower air quality to the point where further development would be prohibited. The Committee takes a fundamentally sound approach to this problem by requiring new facilities to use the "Best Available Control Technology" (BACT)

BACT is defined in the Committee proposal as "the maximum emission limitation (determined) on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs."

Since this definition is so broad—and its interpretation left to local officials without adequate federal participation—there is no guarantee that the best available technology will in fact be used to insure the maximum development of national resources.

For example, the words "economic impact and other costs" could be construed to allow initial development to use the cheapest, least effective pollution control. Such an interpretation would limit the long-run potential for developing resources in pristine areas.

To maximize the potential for developing our national resources, it is particularly important that a more precise definition and program be established for implementing BACT on federally owned lands.

#### CONCLUSION

If the Committee's proposed amendments are adopted, we should remove the word "clean" from the Clean Air Act. Or at the very least, we should rename the law the Fairly Clean Air Act or Sort-of Clean Air Act.

These amendments simply and plainly represent a substantial retreat from a national commitment to air worth breathing for ourselves and our children.

The institutions of government are in deep danger of falling prey to false and arbitrary alternatives—jobs versus livable environment, energy efficiency versus dirty air, industrial progress versus preservation of our natural heritage.

If the people's elected representatives can be frightened into accepting fundamentally unacceptable choices, the country's future—or at least the quality of our future—is in serious jeopardy. For, once we

have abandoned standards which the world's most technologically sophisticated Nation can reach, there is no end to compromise. Once we have mortgaged our children's health and safety, what else is left to give?

What makes life worth living? Is it huge cars, polluting smokestacks, and wasteful appliances? Or is it rather air worth breathing, water worth drinking, and land worth treasuring.

America is down to fundamental choices. Those choices relate to our values. Basic values can be temporarily neglected, but they cannot be permanently compromised. Otherwise, we believe in nothing. We stand for nothing.

History will judge us, on this and related issues, less by our ability to accommodate to immediate pressures by competing interests than by the kind of country we will to future generations. And, if we adopt these proposed amendments, history will judge us harshly.

GARY HART.

## CHANGES IN EXISTING LAW

In compliance with subsection (4) of the rule XXIX of the Standing Rules of the Senate, changes in existing law made by the bill as reported are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman):

## CLEAN AIR ACT

## TITLE I—AIR POLLUTION PREVENTION AND CONTROL

*PART A—AIR QUALITY AND EMISSION LIMITATIONS*

## FINDINGS AND PURPOSES

SEC. 101. (a) The Congress finds—

(1) that the predominant part of the Nation's population is located in its rapidly expanding metropolitan and other urban areas, which generally cross the boundary lines of local jurisdictions and often extend into two or more States;

(2) that the growth in the amount and complexity of air pollution brought about by urbanization, industrial development, and the increasing use of motor vehicles, has resulted in mounting dangers to the public health and welfare, including injury to agricultural crops and livestock, damage to and the deterioration of property and hazards to air and ground transportation;

(3) that the prevention and control of air pollution at its source is the primary responsibility of States and local governments; and

(4) that Federal financial assistance and leadership is essential for the development of cooperative Federal, State, regional and local programs to prevent and control air pollution.

(b) The purposes of this title are—

(1) to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population;

(2) to initiate and accelerate a national research and development program to achieve the prevention and control of air pollution;

(3) to provide technical and financial assistance to State and local governments in connection with the development and execution of their air pollution prevention and control programs; and

(4) to encourage and assist the development and operation of regional air pollution control programs.

## COOPERATIVE ACTIVITIES AND UNIFORM LAWS

SEC. 102. (a) The Administrator shall encourage cooperative activities by the States and local governments for the prevention and control of air pollution; encourage the enactment of improved and, so far as practicable in the light of varying conditions and needs, uniform State and local laws relating to the prevention and control of air pollution; and encourage the making of agreements and compacts between States for the prevention and control of air pollution.

(b) The Administrator shall cooperate with and encourage cooperative activities by all Federal departments and agencies having functions relating to the prevention and control of air pollution, so as to assure the utilization in the Federal air pollution control program of all appropriate and available facilities and resources within the Federal Government.

(c) The consent of the Congress is hereby given to two or more States to negotiate and enter into agreements or compacts, not in conflict with any law or treaty of the United States, for (1) cooperative effort and mutual assistance for the prevention and control of air pollution and the enforcement of their respective laws relating thereto, and (2) the establishment of such agencies, joint or otherwise, as they may deem desirable for making effective such agreements or compacts. No such agreement or compact shall be binding or obligatory upon any State a party thereto unless and until it has been approved by Congress. It is the intent of Congress that no agreement or compact entered into between States after the date of enactment of the Air Quality Act of 1967, which relates to the control and abatement of air pollution in an air quality control region, shall provide for participation by a State which is not included (in whole or in part) in such air quality control region.

## RESEARCH, INVESTIGATION, TRAINING, AND OTHER ACTIVITIES

SEC. 103. (a) The Administrator shall establish a national research and development program for the prevention and control of air pollution and as part of such program shall—

(1) conduct, and promote the coordination and acceleration of, research, investigations, experiments, training, demonstrations, surveys, and studies relating to the causes, effects, extent, prevention, and control of air pollution;

(2) encourage, cooperate with, and render technical services and provide financial assistance to air pollution control agencies and other appropriate public or private agencies, institutions, and organizations, and individuals in the conduct of such activities;

(3) conduct investigations and research and make surveys concerning any specific problem of air pollution in cooperation with any air pollution control agency with a view to recommending a solution of such problem, if he is requested to do so by such agency or if, in his judgment, such problem may affect any community or communities in a State other than that in which the source of the matter causing or contributing to the pollution is located;

(4) establish technical advisory committees composed of recognized experts in various aspects of air pollution to assist in the examination and evaluation of research progress and proposals and to avoid duplication of research.

(b) In carrying out the provisions of the preceding subsection the Administrator is authorized to—

(1) collect and make available, through publications and other appropriate means, the results of and other information, including appropriate recommendations by him in connection therewith, pertaining to such research and other activities;

(2) cooperate with other Federal departments and agencies, with air pollution control agencies, with other public and private agencies, institutions, and organizations, and with any industries involved, in the preparation and conduct of such research and other activities;

(3) make grants to air pollution control agencies, to other public or nonprofit private agencies, institutions, and organizations, and to individuals, for purposes stated in subsection (a)(1) of this section;

(4) contract with public or private agencies, institutions, and organizations, and with individuals, without regard to sections 3648 and 3709 of the Revised Statutes (31 U.S.C. 529; 41 U.S.C. 5);

(5) provide training for, and make training grants to, personnel of air pollution control agencies and other persons with suitable qualifications;

(6) establish and maintain research fellowships, in the Environmental Protection Agency and at public or nonprofit private educational institutions or research organizations;

(7) collect and disseminate, in cooperation with other Federal departments and agencies, and with other public or private agencies, institutions, and organizations having related responsibilities, basic data on chemical, physical, and biological effects of varying air quality and other information pertaining to air pollution and the prevention and control thereof; and

(8) develop effective and practical processes, methods, and prototype devices for the prevention or control of air pollution.

(c) In carrying out the provisions of subsection (a) of this section the Administrator shall conduct research on, and survey the results of other scientific studies on the harmful effects on the health or welfare of persons by the various known air pollutants.

(d) The Administrator is authorized to construct such facilities and staff and equip them as he determines to be necessary to carry out his functions under this Act.

(e) If, in the judgment of the Administrator, an air pollution problem of substantial significance may result from discharge or discharges into the atmosphere, he may call a conference concerning this potential air pollution problem to be held in or near one or more of the places where such discharge or discharges are occurring or will occur. All interested persons shall be given an opportunity to be heard at such conference, either orally or in writing, and shall be permitted to appear in person or by representative in accordance with procedures prescribed by the Administrator. If . . . the Admin-

istrator finds, on the basis of evidence presented at such conference, that the discharge or discharges if permitted to take place or continue are likely to cause or contribute to air pollution subject to abatement under section 115, he shall send such findings, together with recommendations concerning the measures which he finds reasonable and suitable to prevent such pollution, to the person or persons whose actions will result in the discharge or discharges involved; to air pollution agencies of the State or States and of the municipality or municipalities where such discharge or discharges will originate; and to the interstate air pollution control agency, if any, in the jurisdictional area of which any such municipality is located. Such findings and recommendations shall be advisory only, but shall be admitted together with the record of the conference, as part of the proceedings under subsections (b), (c), (d), (e), and (f) of section 115.

(f)(1) In carrying out research pursuant to this Act, the Administrator shall give special emphasis to research on the short- and long-term effects of air pollutants on public health and welfare. In the furtherance of such research, he shall conduct an accelerated research program—

(A) to improve knowledge of the contribution of air pollutants to the occurrence of adverse effects on health, including, but not limited to, behavioral, physiological, toxicological, and biochemical effects; and

(B) to improve knowledge of the short- and long-term effects of air pollutants on welfare.

(2) In carrying out the provisions of this subsection in the Administrator may—

(A) conduct epidemiological studies of the effects of air pollutants on mortality and morbidity;

(B) conduct clinical and laboratory studies on the immunologic, biochemical, physiological, and the toxicological effects including carcinogenic, teratogenic, and mutagenic effects of air pollutants;

(C) utilize, on a reimbursable basis, the facilities of existing Federal scientific laboratories and research centers;

(D) utilize the authority contained in paragraphs (1) through (4) of subsection (b); and

(E) consult with other appropriate Federal agencies to assure that research or studies conducted pursuant to this subsection will be coordinated with research and studies of such other Federal agencies.

(3) In entering into contracts under this subsection, the Administrator is authorized to contract for a term not to exceed 10 years in duration. For the purposes of this paragraph, there are authorized to be appropriated \$15,000,000. Such amounts as are appropriated shall remain available until expended and shall be in addition to any other appropriations under this Act.

#### RESEARCH RELATING TO FUELS AND VEHICLES

SEC. 104. (a) The Administrator shall give special emphasis to research and development into new and improved methods, having industry-wide application, for the prevention and control of air pollu-

tion resulting from the combustion of fuels. In furtherance of such research and development he shall—

(1) conduct and accelerate research programs directed toward development of improved, low-cost techniques for—

(A) control of combustion byproducts of fuels,

(B) removal of potential air pollutants from fuels prior to combustion,

(C) control of emissions from the evaporation of fuels,

(D) improving the efficiency of fuels combustion so as to decrease atmospheric emissions, and

(E) producing synthetic or new fuels which, when used, result in decreased atmospheric emissions.”

(2) provide for Federal grants to public or nonprofit agencies, institutions, and organizations and to individuals, and contracts with public or private agencies, institutions, or persons, for payment of (A) part of the cost of acquiring, constructing, or otherwise securing for research and development purposes, new or improved devices or methods having industry-wide application of preventing or controlling discharges into the air of various types of pollutants; (B) part of the cost of programs to develop low emission alternatives to the present internal combustion engine; (C) the cost to purchase vehicles and vehicle engines, or portions thereof, for research, development, and testing purposes; and (D) carrying out the other provisions of this section, without regard to sections 3648 and 3709 of the Revised Statutes (31 U.S.C. 529; 41 U.S.C. 5): *Provided*, That research or demonstration contracts awarded pursuant to this subsection (including contracts for construction) may be made in accordance with, and subject to the limitations provided with respect to research contracts of the military departments in, section 2353 of title 10, United States Code, except that the determination, approval, and certification required thereby shall be made by the Administrator: *Provided further*, That no grant may be made under this paragraph in excess of \$1,500,000;

(3) determine, by laboratory and pilot plant testing, the results of air pollution research and studies in order to develop new or improved processes and plant designs to the point where they can be demonstrated on a large and practical scale;

(4) construct, operate, and maintain, or assist in meeting the cost of the construction, operation, and maintenance of new or improved demonstration plants or processes which have promise of accomplishing the purposes of this Act;

(5) study new or improved methods for the recovery and marketing of commercially valuable byproducts resulting from the removal of pollutants.

(b) In carrying out the provisions of this section, the Administrator may—

(1) conduct and accelerate research and development of low-cost instrumentation techniques to facilitate determination of quantity and quality of air pollutant emissions, including, but not limited to, automotive emissions;

(2) utilize, on a reimbursable basis, the facilities of existing Federal scientific laboratories;

(3) establish and operate necessary facilities and test sites at which to carry on the research, testing, development, and programming necessary to effectuate the purposes of this section;

(4) acquire secret processes, technical data, inventions, patent applications, patents, licenses, and an interest in lands, plants, and facilities, and other property or rights by purchase, license, lease, or donation; and

(5) cause on-site inspections to be made of promising domestic and foreign projects, and cooperate and participate in their development in which the purposes of the Act will be served thereby.

(c) For the purposes of this section there are authorized to be appropriated \$75,000,000 for the fiscal year ending June 30, 1971, \$125,000,000 for fiscal year ending June 30, 1972, \$150,000,000 for fiscal year ending June 30, 1973, \$150,000,000 for fiscal year ending June 30, 1974, and \$150,000,000 for fiscal year ending June 30, 1975. Amounts appropriated pursuant to this subsection shall remain available until expended.

#### GRANTS FOR SUPPORT OF AIR POLLUTION PLANNING AND CONTROL PROGRAMS

SEC. 105. (a)(1)(A) The Administrator may make grants to air pollution control agencies in an amount up to two-thirds of the cost of planning, developing, establishing, or improving, and up to one-half of the cost of maintaining programs for the prevention and control of air pollution or implementation of national primary and secondary ambient air quality standards.

(B) Subject to subparagraph (C), the Administrator may make grants to air pollution control agencies within the meaning of paragraph (1), (2), or (4) of section 302(b) in an amount up to three-fourths of the cost of planning, developing, establishing, or improving, and up to three-fifths of the cost of maintaining any program for the prevention and control of air pollution or implementation of national primary and secondary ambient air quality standards in an area that includes two or more municipalities, whether in the same or different States.

(C) With respect to any air quality control region or portion thereof for which there is an applicable implementation plan under section 110, grants under subparagraph (B) may be made only to air pollution control agencies which have substantial responsibilities for carrying out such applicable implementation plan.

(2) Before approving any grant under this subsection to any air pollution control agency within the meaning of sections 302(b)(2) and 302(b)(4) the Administrator shall receive assurances that such agency provides for adequate representation of appropriate State, interstate, local, and (when appropriate) international, interests in the air quality control region.

(3) Before approving any planning grant under this subsection to any air pollution control agency within the meaning of sections 302(b)(2) and 302(b)(4), the Administrator shall receive assurances that such agency has the capability of developing a comprehensive air quality plan for the air quality control region, which plan shall

include (when appropriate) a recommended system of alerts to avert and reduce the risk of situations in which there may be imminent and serious danger to the public health or welfare from air pollutants and the various aspects relevant to the establishment of air quality standards for such air quality control region, including the concentration of industries, other commercial establishments, population and naturally occurring factors which shall affect such standards.

(b) From the sums available for the purposes of subsection (a) of this section for any fiscal year, the Administrator shall from time to time make grants to air pollution control agencies upon such terms and conditions as the Administrator may find necessary to carry out the purpose of this section. In establishing regulations for the granting of such funds the Administrator shall, so far as practicable, give due consideration to (1) the population, (2) the extent of the actual or potential air pollution problem, and (3) the financial need of the respective agencies. [No agency shall receive any grant under this section during any fiscal year when its expenditures of non-Federal funds for other than nonrecurrent expenditures for air pollution control programs will be less than its expenditures were for such programs during the preceding fiscal year; and no agency shall receive any grant under this section with respect to the maintenance of a program for the prevention and control of air pollution unless the Administrator is satisfied that such grant will be so used as to supplement and, to the extent practicable, increase the level of State, local, or other non-Federal funds that would in the absence of such grant be made available for the maintenance of such program, and will in no event supplant such State, local, or other non-Federal funds.] *No agency shall receive any grant under this section during any fiscal year when its expenditures of non-Federal funds for other than nonrecurrent expenditures for air pollution control programs will be less than its expenditures were for such programs during the preceding fiscal year, unless the Administrator determines that a reduction in expenditures is attributable to a nonselective reduction in expenditures in the programs of all executive branch agencies of the applicable unit of government; and no agency shall receive any grant under this section with respect to the maintenance of a program for the prevention and control of air pollution unless the Administrator is satisfied that such grant will be so used to supplement and, to the extent practicable, increase the level of State, local, or other non-Federal funds that would in the absence of such grant be made available for the maintenance of such program, and will in no event supplant such State, local, or other non-Federal funds. No grant shall be made under this section until the Administrator has consulted with the appropriate official as designated by the Governor or Governors of the State or States affected.*

(c) Not more than 10 per centum of the total of funds appropriated or allocated for the purposes of subsection (a) of this section shall be granted for air pollution control programs in any one State. In the case of a grant for a program in an area crossing State boundaries, the Administrator shall determine the portion of such grant that is chargeable to the percentage limitation under this subsection for each State into which such area extends. *In fiscal year 1977 and subsequent fiscal years, subject to the provisions of subsection (b) of this*

*section, no State shall receive less than one-half of 1 per centum of the annual appropriation for grants under this section for grants to agencies within such State.*

(d) The Administrator, with the concurrence of any recipient of a grant under this section, may reduce the payments to such recipient by the amount of the pay, allowances, traveling expenses, and any other costs in connection with the detail of any officer or employee to the recipient under section 301 of this Act, when such detail is for the convenience of, and at the request of such recipient and for the purpose of carrying out the provisions of this Act. The amount by which such payments have been reduced shall be available for payment of such costs by the Administrator, but shall, for the purpose of determining the amount of any grant to a recipient under subsection (a) of this section, be deemed to have been paid to such agency.

#### INTERSTATE AIR QUALITY AGENCIES OR COMMISSIONS

SEC. 106. For the purpose of developing implementation plans for any interstate air quality control region designated pursuant to section 107, the Administrator is authorized to pay, for two years, up to 100 per centum of the air quality planning program costs of any agency designated by the Governors of the affected States, which agency shall be capable of recommending to the Governors, plans for implementation of national primary and secondary ambient air quality standards and shall include representation from the States and appropriate political subdivisions within the air quality control region. After the initial two-year period, the Administrator is authorized to make grants to such agency in an amount up to three-fourths of the air quality planning program costs of such agency.

#### AIR QUALITY CONTROL REGIONS

SEC. 107. (a) Each State shall have the primary responsibility for assuring air quality within the entire geographic area comprising such State by submitting an implementation plan for such State which will specify the manner in which national primary and secondary ambient air quality standards will be achieved and maintained within each air quality control region in such State.

(b) For purposes of developing and carrying out implementation plans under section 110—

(1) an air quality control region designated under this section before the date of enactment of the Clean Air Amendments of 1970, or a region designated after such date under subsection (c), shall be an air quality control region; and

(2) the portion of such State which is not part of any such designated region shall be an air quality control region, but such portion may be subdivided by the State into two or more air quality control regions with the approval of the Administrator.

(c) The Administrator shall, within 90 days after the date of enactment of the Clean Air Amendments of 1970, after consultation with appropriate State and local authorities, designate as an air quality control region any interstate area or major intrastate area

which he deems necessary or appropriate for the attainment and maintenance of ambient air quality standards. The Administrator shall immediately notify the Governors of the affected States of any designation made under this subsection.

(d)(1) *For the purpose of transportation control planning, prevention of significant deterioration, and for other purposes, each State, within one hundred and twenty days after the date of enactment of the Clean Air Amendments of 1976, shall submit to the Administrator a list, together with a summary of the available information, identifying those air quality control regions, or portions thereof, established pursuant to this section in such State which on the date of enactment of the Clean Air Amendments of 1976—*

*(A) do not meet a national primary ambient air quality standard for any mobile source related air pollutant;*

*(B) do not meet, or in the judgment of the State may not in the time period required by an applicable implementation plan attain or maintain, any national primary ambient air quality standard for any pollutants other than those listed in subparagraph (A) of this paragraph through the application of measures or controls approved or promulgated pursuant to section 110 of this Act;*

*(C) do not meet a national secondary ambient air quality standard;*

*(D) cannot be classified under subparagraph (B) or (C) of this paragraph on the basis of available information, for ambient air quality levels for sulfur oxides or particulate matter; or*

*(E) have ambient air quality levels better than any national primary or secondary air quality standard other than for sulfur oxides or particulate matter, or for which there is not sufficient data to be classified under subparagraph (A) of this paragraph.*

(2) *Not later than sixty days after submittal of the list under paragraph (1) of this subsection the Administrator shall promulgate each such list with such modifications as he deems necessary. Whenever the Administrator proposes to modify a list submitted by a State, he shall notify the State and request all available data relating to such region or portion, and provide such State with an opportunity to demonstrate why any proposed modification is inappropriate.*

(3) *Any region or portion thereof which is not classified under subparagraph (B) or (C) of paragraph (1) of this subsection for sulfur oxides or particulate matter within one hundred and eighty days after enactment of the Clean Air Amendments of 1976 shall be deemed to be a region classified under subparagraph (D) of paragraph (1) of this subsection.*

(4) *A State may from time to time review, and as appropriate revise and resubmit, the list required under this subsection. The Administrator shall consider and promulgate such revised list in accordance with this subsection.*

#### AIR QUALITY CRITERIA AND CONTROL TECHNIQUES

SEC. 108. (a)(1) For the purpose of establishing national primary and secondary ambient air quality standards, the Administrator shall within 30 days after the date of enactment of the Clean Air Amend-

ments of 1970 publish, and shall from time to time thereafter revise, a list which includes each air pollutant—

(A) which in his judgment has an adverse effect on public health and welfare;

(B) the presence of which in the ambient air results from numerous or diverse mobile or stationary sources; and

(C) for which air quality criteria had not been issued before the date of enactment of the Clean Air Amendments of 1970, but for which he plans to issue air quality criteria under this section.

(2) The Administrator shall issue air quality criteria for an air pollutant within 12 months after he has included such pollutant in a list under paragraph (1). Air quality criteria for an air pollutant shall accurately reflect the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on public health or welfare which may be expected from the presence of such pollutant in the ambient air, in varying quantities. The criteria for an air pollutant, to the extent practicable, shall include information on—

(A) those variable factors (including atmospheric conditions) which of themselves or in combination with other factors may alter the effects on public health or welfare of such air pollutant;

(B) the types of air pollutants which, when present in the atmosphere, may interact with such pollutant to produce an adverse effect on public health or welfare; and

(C) any known or anticipated adverse effects on welfare.

(b)(1) Simultaneously with the issuance of criteria under subsection (a), the Administrator shall, after consultation with appropriate advisory committees and Federal departments and agencies, issue to the States and appropriate air pollution control agencies, information on air pollution control techniques, which information shall include data relating to the [technology and costs of emission control] *cost of installation and operation, energy requirements, air quality benefits, and environmental impact of the emission control technology.* Such information shall include such data as are available on available technology and alternative methods of prevention and control of air pollution. Such information shall also include data on alternative fuels, processes, and operating methods which will result in elimination of significant reduction of emissions.

(2) In order to assist in the development of information on pollution control techniques, the Administrator may establish a standing consulting committee for each air pollutant included in a list published pursuant to subsection (a)(1), which shall be comprised of technically qualified individuals representative of State and local governments, industry, and the academic community. Each such committee shall submit as appropriate, to the Administrator, information related to that required in paragraph (1).

(c) The Administrator shall from time to time review, and, as appropriate, modify, and reissue any criteria or information on control techniques issued pursuant to this section.

(d) The issuance of air quality criteria and information on air pollution control techniques shall be announced in the Federal Register and copies shall be made available to the general public.

(e) *The Administrator shall, after consultation with the Secretary of Transportation and the Secretary of Housing and Urban Development*

and State and local officials and within one hundred and eighty days after the enactment of this subsection, and from time to time thereafter, publish guidelines on the basic program elements for the transportation planning process assisted under subsection (h) of section 110 of this Act. Such guidelines shall include information on—

(1) methods to identify and evaluate alternative planning and control activities;

(2) methods of reviewing plans on a regular basis as conditions change or new information is presented;

(3) identification of funds and other resources necessary to implement the plan, including interagency agreements on providing such funds and resources;

(4) methods to assure participation by the public in all phases of the planning process; and

(5) such other methods as the Administrator determines necessary to carry out a continuous planning process.

(f)(1) The Administrator shall publish and make available to appropriate Federal agencies, States, and air pollution control agencies, including agencies assisted under subsection (h) of section 110 of this Act, within six months after enactment of this subsection for clauses (i), (ii), (iii), and (iv) of subparagraph (A) and within one year after the enactment of this subsection for the balance of this subsection (and from time to time thereafter), (A) information, prepared, as appropriate, in cooperation with the Secretary of Transportation, regarding processes, procedures, and methods to reduce or control each such pollutant, including but not limited to—

(i) motor vehicle emission inspection and maintenance programs;

(ii) programs to control vapor emissions from fuel transfer and storage operations and operations using solvents;

(iii) programs for improved public transit;

(iv) programs to establish exclusive bus and carpool lanes and areawide carpool programs;

(v) programs to limit portions of road surfaces or certain sections of the metropolitan areas to the use of common carriers, both as to time and place;

(vi) programs for long-range transit improvements involving new transportation policies and transportation facilities or major changes in existing facilities;

(vii) programs to control on street parking and new offstreet parking facilities;

(viii) programs to construct new parking facilities and operate existing parking facilities for the purpose of park and ride lots and fringe parking;

(ix) programs to limit portions of road surfaces or certain sections of the metropolitan area to the use of nonmotorized vehicles or pedestrian use, both as to time and place;

(x) provisions for employer participation in programs to encourage carpooling, vanpooling, mass transit, bicycling, and walking;

(xi) programs for secure bicycle storage facilities and other facilities, including bicycle lanes, for the convenience and protection of bicyclists, in both public and private areas;

(xii) programs of staggered hours of work;

(xiii) programs to institute road user charges, tolls, or differential rates to discourage single occupancy automobile trips;

(xiv) programs to control extended idling of vehicles;

(xv) programs to reduce emissions by improvements in traffic flow;

(xvi) programs for the conversion of fleet vehicles to cleaner engines or fuels, or to otherwise control fleet vehicle operations;

(xvii) programs for retrofit of emission devices or controls on vehicles and engines, other than light duty vehicles, not subject to regulations under section 202 of title II of this Act;

(xviii) programs to reduce motor vehicle emissions which are caused by extreme cold start conditions;

(B) information on additional methods or strategies that will contribute to the reduction of mobile source related pollutants during periods in which any primary ambient air quality standard will be exceeded during any extension under subsection (h) of section 110 of this Act and during episodes for which an air pollution alert or emergency has been declared; (C) information on other measures which may be employed to reduce the impact on public health or protect the health of sensitive or susceptible individuals or groups; and (D) information on the extent to which any process, procedure, or method to reduce or control such air pollutant may cause an increase in the emissions or formation of any other pollutant.

(2) In publishing such information the Administrator shall describe (A) the effectiveness of such processes, procedures, and methods; (B) factors related to the costs and benefits of such processes, procedures, and methods, in different situations; (C) transportation factors related to such processes, procedures, and methods; (D) the environmental, energy, and economic impact of such processes, procedures, and methods; and (E) his assessment of whether each such process, procedure, or method is reasonable for application to attain a primary ambient air quality standard.

#### NATIONAL AMBIENT AIR QUALITY STANDARDS

##### SEC. 109. (a)(1) The Administrator—

(A) within 30 days after the date of enactment of the Clean Air Amendments of 1970, shall publish proposed regulations prescribing a national primary ambient air quality standard and a national secondary ambient air quality standard for each air pollutant for which air quality criteria have been issued prior to such date of enactment; and

(B) after a reasonable time for interested persons to submit written comments thereon (but no later than 90 days after the initial publication of such proposed standards) shall by regulation promulgate such proposed national primary and secondary ambient air quality standards with such modifications as he deems appropriate.

(2) With respect to any air pollutant for which air quality criteria are issued after the date of enactment of the Clean Air Amendments of 1970, the Administrator shall publish, simultaneously with the issuance of such criteria and information, proposed national primary and secondary ambient air quality standards for any such pollutant. The procedure provide for in paragraph (1)(B) of this subsection shall apply to the promulgation of such standards.

(b)(1) National primary ambient air quality standards, prescribed under subsection (a) shall be ambient air quality standards the attainment and maintenance of which in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health. Such primary standards may be revised in the same manner as promulgated.

(2) Any national secondary ambient air quality standard prescribed, under subsection (a) shall specify a level of air quality the attainment and maintenance of which in the judgment of the Administrator, based on such criteria, is requisite to protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air. Such secondary standards may be revised in the same manner as promulgated.

#### IMPLEMENTATION PLANS

SEC. 110. (a)(1) Each State shall, after reasonable notice and public hearings, adopt and submit to the Administrator, within nine months after the promulgation of a national primary ambient air quality standard (or any revision thereof) under section 109 for any air pollutant, a plan which provides for implementation, maintenance and enforcement of such primary standard in each air quality control region (or portion thereof) within such State. In addition, such State shall adopt and submit to the Administrator (either as a part of a plan submitted under the preceding sentence or separately) within nine months after the promulgation of a national ambient air quality secondary standard (or revision thereof), a plan which provides for implementation, maintenance and enforcement of such secondary standard in each air quality control region (or portion thereof) within such State. Unless a separate public hearing is provided, each State shall consider its plan implementing such secondary standard at the hearing required by the first sentence of this paragraph.

*Each State shall adopt and submit to the Administrator within eight months after the date of enactment of the Clean Air Amendments of 1976, a revision of its implementation plan which provides for implementation, maintenance and enforcement of the provisions of subsection (g) of this section for the prevention of significant deterioration in each appropriate air quality control region (or portion thereof) within such State.*

(2) The Administrator shall, within four months after the date required for submission of a plan under paragraph (1), approve or disapprove such plan for each portion thereof. The Administrator shall approve such plan, or any portion thereof, if he determines that it was adopted after reasonable notice and hearing and that—

(A)(i) in the case of a plan implementing a national primary ambient air quality standard, it provides for the attainment of such primary standard as expeditiously as practicable but (subject to subsection (e)) in no case later than three years from the date of approval of such plan (or any revision thereof to take account of a revised primary standard); and, (ii) in the case of a plan implementing a national secondary ambient air

quality standard, it specifies a reasonable time at which such secondary standard will be attained;

[(B) it includes emission limitations, schedules, and timetables for compliance with such limitations, and such other measures as may be necessary to insure attainment and maintenance of such primary or secondary standard, including, but not limited to, land-use and transportation controls];

*(B) it includes emission limitations, schedules, and timetables for compliance with such limitations, and, in addition, as may be necessary, (i) to assure attainment and maintenance of such primary or secondary standard, such other measures, including, but not limited, to transportation controls, and enforceable supplemental emission reduction strategies for existing nonferrous smelters, and (ii) land-use controls for the purpose of maintenance of, or to prevent further deterioration from, any primary ambient air quality standard: Provided, however, That land-use controls shall be included in an implementation plan only after consideration of the energy, environmental, and economic impacts of such controls;*

(C) it includes provision for establishment and operation of appropriate devices, methods, systems, and procedures necessary to (i) monitor, compile, and analyze data on ambient air quality and, (ii) upon request, make such data available to the Administrator;

(D) it includes a program to provide for the enforcement of emission limitations and regulation of the modification, construction, and operation of any stationary source, including a permit or equivalent program for any major emitting facility, within such region to assure (i) that national ambient air quality standards are achieved and maintained, (ii) that the requirements of subsection (g) of this section are met, and (iii) a procedure, meeting the requirements of paragraph (4), for review (prior to construction or modification) of the location of new sources to which a standard of performance will apply;

(E) it contains adequate provisions for intergovernmental cooperation, including measures necessary to insure that emissions of air pollutants from sources located in any air quality control region will not interfere with the attainment or maintenance of such primary or secondary standard in any portion of such region outside of such State or in any other air quality control region;

(F) it provides (i) necessary assurances that the State will have adequate personnel, funding, and authority to carry out such implementation plan; (ii) requirements for installation of equipment by owners or operators of stationary sources to monitor emissions from such sources; (iii) for periodic reports on the nature and amounts of such emissions; (iv) that such reports shall be correlated by the State agency with any emission limitations or standards established pursuant to this Act, which reports shall be available at reasonable times for public inspection; and (v) for authority comparable to that in section 303, and adequate contingency plans to implement such authority;

(G) it provides, to the extent necessary and practicable, for periodic inspection and testing of motor vehicles to enforce compliance with applicable emission standards; and

(H) it provides for revision, after public hearings, of such plan (i) from time to time as may be necessary to take account of revisions of such national primary or secondary ambient air quality standard or the availability of improved or more expeditious methods of achieving such primary or secondary standard; **[or]** (ii) whenever the Administrator finds on the basis of information available to him that the plan is substantially inadequate to achieve the national ambient air quality primary or secondary standard which it implements, *or to incorporate the requirements of subsection (g) of this section; or (iii) to incorporate any additional requirements established under the Clean Air Amendments of 1976.*

(3)(A) The Administrator shall approve any revision of an implementation plan applicable to an air quality control region if he determines that it meets the requirements of paragraph (2) and has been adopted by the State after reasonable notice and public hearings.

(B) As soon as practicable, the Administrator shall, consistent with the purposes of this Act and the Energy Supply and Environmental Coordination Act of 1974, review each State's applicable implementation plans and report to the State on whether such plans can be revised in relation to fuel burning stationary sources (or persons supplying fuel to such sources) without interfering with the attainment and maintenance of any national ambient air quality standard within the period permitted in this section. If the Administrator determines that any such plan can be revised, he shall notify the State that a plan revision may be submitted by the State. Any plan revision which is submitted by the State shall, after public notice and opportunity for public hearing, be approved by the Administrator if the revision relates only to fuel burning stationary sources (or persons supplying fuel to such sources), and the plan as revised complies with paragraph (2) of this subsection. The Administrator shall approve or disapprove any revision no later than three months after its submission.

(4) The procedure referred to in paragraph (2)(D) for review, prior to construction or modification, of the location of new sources shall (A) provide for adequate authority to prevent the construction or modification of any new source to which a standard of performance under section 111 will apply at any location which the State determines will prevent the attainment or maintenance within any air quality control region (or portion thereof) within such State of a national ambient air quality primary or secondary standard, *or which will not comply with a standard of performance under section 111, or which does not conform to the requirements of subsection (g) of this section,* and (B) require that prior to commencing construction or modification of any such source, the owner or operator thereof shall submit to such State such information as may be necessary to permit the State to make a determination under clause (A).

(b) The Administrator may, wherever he determines necessary, extend the period for submission of any plan or portion thereof which implements a national secondary ambient air quality standard for a period not to exceed eighteen months from the date otherwise required for submission of such plan.

(c)(1) The Administrator shall, after consideration of any State hearing record, promptly prepare and publish proposed regulations

setting forth an implementation plan, or portion thereof, for a State if—

(A) the State fails to submit an implementation plan for any national ambient air quality primary or secondary standard within the time prescribed,

(B) the plan, or any portion thereof, submitted for such State is determined by the Administrator not to be in accordance with the requirements of this section, or

(C) the State fails, within 60 days after notification by the Administrator or such longer period as he may prescribe, to revise an implementation plan as required pursuant to a provision of its plan referred to in subsection (a)(2)(H).

If such State held no public hearing associated with respect to such plan (or revision thereof), the Administrator shall provide opportunity for such hearing within such State on any proposed regulation. The Administrator shall, within six months after the date required for submission of such plan (or revision thereof), promulgate any such regulations unless, prior to such promulgation, such State has adopted and submitted a plan (or revision) which the Administrator determines to be in accordance with the requirements of this section.

(2)(A) The Administrator shall conduct a study and shall submit a report to the Committee on Interstate and Foreign Commerce of the United States House of Representatives and the Committee on Public Works of the United States Senate not later than three months after date of enactment of this paragraph on the necessity of parking surcharge, management of parking supply, and preferential bus/carpool lane regulations as part of the applicable implementation plans required under this section to achieve and maintain national primary ambient air quality standards. The study shall include an assessment of the economic impact of such regulations, consideration of alternative means of reducing total vehicle miles traveled, and an assessment of the impact of such regulations on other Federal and State programs dealing with energy or transportation. In the course of such study, the Administrator shall consult with other Federal officials including, but not limited to, the Secretary of Transportation, the Federal Energy Administrator, and the Chairman of the Council on Environmental Quality.

(B) No parking surcharge regulation may be required by the Administrator under paragraph (1) of this subsection as a part of an applicable implementation plan. All parking surcharge regulations previously required by the Administrator shall be void upon the date of enactment of this subparagraph. This subparagraph shall not prevent the Administrator from approving parking surcharges if they are adopted and submitted by a State as part of an applicable implementation plan. The Administrator may not condition approval of any implementation plan submitted by a State on such plan's including a parking surcharge regulation.

(C) The Administrator is authorized to suspend until January 1, 1975, the effective date or applicability of any regulations for the management of parking supply or any requirement that such regulations be a part of an applicable implementation plan approved or promulgated under this section. This exercise of the authority under this subparagraph shall not prevent the Administrator from approving

such regulations if they are adopted and submitted by a State as part of an applicable implementation plan. If the Administrator exercises the authority under this subparagraph, regulations requiring a review or analysis of the impact of proposed parking facilities, before construction which take effect on or after January 1, 1975, shall not apply to parking facilities on which construction has been initiated before January 1, 1975.

(D) For purposes of this paragraph—

(i) The term “parking surcharge regulation” means a regulation imposing or requiring the imposition of any tax, surcharge, fee, or other charge on parking spaces, or any other area used for the temporary storage of motor vehicles.

(ii) The term “management of parking supply” shall include any requirement providing that any new facility containing a given number of parking spaces shall receive a permit or other prior approval, issuance of which is to be conditioned on air quality considerations.

(iii) The term “preferential bus/carpool lane” shall include any requirement for the setting aside of one or more lanes of a street or highway on a permanent or temporary basis for the exclusive use of buses or carpools, or both.

(E) No standard, plan, or requirement, relating to management of parking supply or preferential bus/carpool lanes shall be promulgated after the date of enactment of this paragraph by the Administrator pursuant to this section, unless such promulgation has been subjected to at least one public hearing which has been held in the area affected and for which reasonable notice has been given in such area. If substantial changes are made following public hearings, one or more additional hearings shall be held in such area after such notice.

(d) For purposes of this Act, an applicable implementation plan is the implementation plan, or most recent revision thereof, which has been approved under subsection (a) or promulgated under subsection (c) and which implements a national primary or secondary ambient air quality standard in a State *and the requirements of subsection (g) of this section.*

(e)(1) Upon application of a Governor of a State at the time of submission of any plan implementing a national ambient air quality primary standard, the Administrator may (subject to paragraph (2)) extend the three-year period referred to in subsection (a)(2)(A)(i) for not more than two years for an air quality control region if after review of such plan the Administrator determines that—

(A) one or more emission sources (or classes of moving sources) are unable to comply with the requirements of such plan which implement such primary standard because the necessary technology or other alternatives are not available or will not be available soon enough to permit compliance within such three-year period, and

(B) the State has considered and applied as a part of its plan reasonably available alternative means of attaining such primary standard and has justifiably concluded that attainment of such primary standard within the three years cannot be achieved.

(2) The Administrator may grant an extension under paragraph (1) only if he determines that the State plan provides for—

(A) application of the requirements of the plan which implement such primary standard to all emission sources in such region other than the sources (or classes) described in paragraph (1)(A) within the three-year period, and

(B) such interim measures of control of the sources (or classes) described in paragraph (1)(A) as the Administrator determines to be reasonable under the circumstances.

(f)(1) Prior to the date on which any stationary source or class of moving sources is required to comply with any requirement of an applicable implementation plan the Governor of the State to which such plan applies may apply to the Administrator to postpone the applicability of such requirement to such source (or class) for not more than one year. If the Administrator determines that—

(A) good faith efforts have been made to comply with such requirement before such date,

(B) such source (or class) is unable to comply with such requirement because the necessary technology or other alternative methods of control are not available or have not been available for a sufficient period of time,

(C) any available alternative operating procedures and interim control measures have reduced or will reduce the impact of such source on public health, and

(D) the continued operation of such source is essential to national security or to the public health or welfare, then the Administrator shall grant a postponement of such requirement.

(2)(A) Any determination under paragraph (1) shall (i) be made on the record after notice to interested persons and opportunity for hearing, (ii) be based upon a fair evaluation of the entire record at such hearing, and (iii) include a statement setting forth in detail the findings and conclusions upon which the determination is based.

(B) Any determination made pursuant to this paragraph shall be subject to judicial review by the United States Court of Appeals for the circuit which includes such State upon the filing in such court within 30 days from the date of such decision of a petition by any interested person praying that the decision be modified or set aside in whole or in part. A copy of the petition shall forthwith be sent by registered or certified mail to the Administrator and thereupon the Administrator shall certify and file in such court the record upon which the final decision complained of was issued, as provided in section 2112 of title 28, United States Code. Upon the filing of such petition the court shall have jurisdiction to affirm or set aside the determination complained of in whole or in part. The findings of the Administrator with respect to questions of fact (including each determination made under subparagraphs (A), (B), (C), and (D) of paragraph (1)) shall be sustained if based upon a fair evaluation of the entire record at such hearing.

(C) Proceedings before the court under this paragraph shall take precedence over all the other causes of action on the docket and shall be assigned for hearing and decision at the earliest practicable date and expedited in every way.

(D) Section 307(a) (relating to subpoenas) shall be applicable to any proceeding under this subsection.

(g)(1) Each implementation plan shall include requirements applicable to each region identified in the list promulgated pursuant to paragraph (1)(D) of subsection (d) of section 107 of this Act, which shall, in addition to the requirements of paragraphs (2), (3), (4), (5), and (6) of this subsection, provide:

(A) for designation as class I areas of—

(i) all international parks, and each national park, national wilderness area, and national memorial park which exceeds five thousand acres in size and which is in existence on the date of enactment of the Clean Air Amendments of 1976;

(ii) each national park and national wilderness area established after the enactment of the Clean Air Amendments of 1976, unless the Federal Land Manager and the State or States in which such lands are located agree to redesignate such areas as class II areas; and

(iii) such other areas as the State (and, if appropriate, after notice and consultation with adjacent States) may designate, except that Federal lands may be so designated only with the concurrence of the Federal Land Manager;

(B) that all remaining areas in such State identified under section 107(d)(1)(D) of this Act and not designated class I pursuant to subparagraph (A) of this paragraph shall be designated as class II areas.

(2) As it relates to the pollutants particulate matter and sulfur dioxide, the cumulative change in the air quality in any area designated under paragraph (1) of this subsection resulting from the construction and operation of any new major emitting facility or facilities shall be limited to the following projected increases in pollutant concentrations over the baseline air quality concentration:

Pollutant	(In micrograms per cubic meter)
Particulate matter:	
Annual geometric mean	10
Twenty-four-hour maximum	30
Sulfur dioxide:	
Annual arithmetic mean	15
Twenty-four-hour maximum	100
Three-hour maximum	700

(3) Requirements applicable to an area designated as class I or class II shall include a management program to assure that, in the event of the proposed construction of any major emitting facility in any such area, the construction of such facility shall be preceded by an analysis of the ambient air quality, climate and meteorology, soils and vegetation, and visibility at the site of the proposed facility and in the area potentially affected by the emissions from the proposed facility for each pollutant regulated under this Act which will be emitted from, or which results from the construction or operation of, such facility. Such analysis shall be included in any permit application required.

(4) No major emitting facility on which construction is commenced after June 1, 1975, may be constructed in any area designated under this subsection—

(A) unless a permit has been issued for such proposed facility in accordance with this section, setting forth emission limitations for such facility which conform to the requirements of this subsection,

(B) unless the proposed facility is subject to the best available control technology for each pollutant subject to regulation under this Act emitted from, or which results from, such facility,

(C) unless the owner or operator of such facility demonstrates that emissions of particulate matter and sulfur oxides will not contribute to a cumulative change in the air quality in excess of that allowed in paragraph (2) of this subsection,

(D) unless the provisions of paragraph (5) of this subsection with respect to protection of class I areas have been complied with for such facility.

(E) unless there has been an analysis of any air quality impacts projected for the area as a result of growth associated with such facility, and

(F) unless there has been opportunity for a public hearing conducted by a State on any proposed permit for such facility, with an opportunity for interested parties, including representatives of the Administrator, to appear and provide testimony on such facility, including alternatives thereto, and control technology requirements.

(5)(A) The State shall provide notice of any permit application to the Administrator and the Administrator shall provide notice of the permit application to the Federal Land Manager and the Federal official charged with direct responsibility for management of any lands within a class I area which may be affected by emissions from the proposed facility.

(B) The Federal Land Manager and the Federal official charged with direct responsibility for management of such lands shall have an affirmative responsibility to protect the air quality related values of any such lands within a class I area and to consider, in consultation with the Administrator, whether a proposed major emitting facility will have an adverse impact on such values.

(C) In any case where the Federal official charged with direct responsibility for management of any lands within a class I area or the Federal Land Manager of such lands, or the Administrator, or the Governor of an adjacent State containing such a class I area files a notice alleging that emissions from a proposed major emitting facility may cause or contribute to a change in the air quality in such area and identifying the potential adverse impact of such change, a permit shall not be issued unless the owner or operator of such facility demonstrates that emissions of particulate matter and sulfur dioxide will not contribute to a cumulative change in air quality in excess of the following projected increases in pollutant concentrations over the baseline air quality concentration:

Pollutant	(In micrograms per cubic meter)
Particulate matter:	
Annual geometric mean .....	5
Twenty-four-hour maximum .....	10
Sulfur dioxide:	
Annual arithmetic mean .....	2
Twenty-four-hour maximum .....	5
Three-hour maximum .....	25

Provided, That (i) in any case where the Federal Land Manager demonstrates to the satisfaction of the State that the emissions from such facility will have an adverse impact on the air quality-related values of such lands, notwithstanding the fact that the change in air quality resulting from emissions from such facility will not exceed for such lands the

limitations on projected increases established in this subparagraph, a permit shall not be issued, and (ii) in any case where the owner or operator of such facility demonstrates to the satisfaction of the Federal Land Manager, and the Federal Land Manager so certifies, that the emissions from such facility will have no adverse impact on the air quality related values of such lands, notwithstanding the fact that the change in air quality resulting from emissions from such facility will exceed for such lands the limitations on projected increases established in this subparagraph, the State may issue a permit.

(6) For purposes of this subsection—

(A) the item “best available control technology” means an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under this Act emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques, including fuel cleaning or treatment, for control of each such pollutant. In no event shall application of “best available control technology” result in emissions of any pollutants which will exceed the emissions allowed by any applicable standard established pursuant to section 111 or 112 of this Act;

(B) the term “Federal Land Manager” means (i) the Secretary of the department with authority over any lands of the United States, and (ii) Indian tribes which have legal jurisdiction over tribal lands; and

(C) the term “commenced” as applied to construction of a major emitting facility means that the owner or operator has obtained all necessary preconstruction approvals or permits required by Federal, State, or local laws or regulations and either has (i) begun, or caused to begin, a continuous program of physical on-site construction of the facility or (ii) entered into binding agreements or contractual obligations, which cannot be canceled or modified without substantial loss to the owner or operator, to undertake a program of construction of the facility to be completed within a reasonable time: Provided, That in the case of a facility on which construction was commenced in accordance with this definition after June 1, 1975, and prior to the enactment of the Clean Air Amendments of 1976, the review and permitting of such facility shall be in accordance with the regulations for the prevention of significant deterioration in effect prior to the enactment of the Clean Air Amendments of 1976.

(7)(A) Until a revision of the implementation plan in accordance with this subsection is submitted and approved, significant deterioration for those pollutants covered by such regulations shall be regulated pursuant to applicable regulations and procedures for prevention of significant deterioration established under authority of the Clean Air Act in effect prior to the enactment of the Clean Air Amendments of 1976, except as those regulations provide for designations of nondeterioration areas which allow increases in emissions of air pollutants or any reduction in air quality inconsistent with paragraphs (1) and (2) of this subsection, or do not require the degree of control required by paragraph (6)(A) of this subsection, or are otherwise inconsistent with the requirements of this subsection.

(B) For the purpose of this section any State may submit the revision to its implementation plan relating to the prevention of significant deterioration which has been adopted for such State as of the date of enactment of the Clean Air Amendments of 1976. Such requirements shall be the requirements applicable to such State under this section unless the Administrator finds that such requirements or a portion thereof are inconsistent with the requirements of this subsection and notifies the State of such inconsistency.

(8) The Administrator shall study strategies to control pollutants not covered by paragraph (2) of this subsection in order to prevent significant deterioration of air quality for such pollutants and shall report to the Congress within one year after the date of enactment of the Clean Air Amendments of 1976 recommending control strategies for such pollutants. Such report shall recommend increments, as appropriate, for class I and class II areas applicable to the emissions from stationary sources of nitrogen oxides, hydrocarbons, and such other pollutants and control strategies as the Administrator determines to be appropriate.

(9) The Administrator shall, and a Governor may, take such measures under sections 113 or 304 of this Act, including seeking injunctive relief, as necessary to prevent the issuance of a permit under this subsection or the construction of a major emitting facility which does not conform to the requirements of paragraphs (4) and (5) of this subsection.

(10) In the event any State adjacent to a State subject to the requirements of this subsection disagrees with the designation of any class I area in the State subject to the requirements, or if a permit is proposed to be issued for any new major emitting facility proposed for construction in an adjoining State which the Governor of the affected State determines will cause or contribute to a cumulative change in air quality in excess of that allowed in this subsection in any class I or class II area within the affected State, the Governor may request the Administrator to enter into negotiations with the States involved to resolve such dispute. If requested by any State involved, the Administrator shall make a recommendation to resolve the dispute and protect the air quality related values of the lands in such State. If the States involved do not reach agreement, the Administrator shall resolve the dispute and his determination, or the results of agreements reached through other means, shall become part of the applicable plan and shall be enforceable as part of such plan.

(11) Notwithstanding paragraphs (2), (4), and (5) of this subsection, in no instance shall the Administrator approve any requirements or revision of any implementation plan, nor shall any permitting authority issue a permit under this subsection for a new major emitting facility, which would allow for the deterioration of air quality to a level that would exceed any national ambient air quality standard.

(12) Nothing in this subsection shall alter or affect section 116 of this Act.

(h)(1) Upon application by the Governor of a State on or after June 1, 1976, the Administrator may extend for not more than five years the deadline for attainment of national primary ambient air quality standards required under this section where transportation control measures are necessary for the attainment of such standards and where the implementation of such control measures by the date established in existing implementation plans would have serious adverse social or economic effects.

(2) The Administrator may consider extension applications for only those air quality control regions in which the State has:

(A) implemented or will have implemented by June 1, 1977, (i) the requirements of the applicable implementation plan with respect to stationary source emissions of transportation-related pollutants, and (ii) implemented or will have begun implementing by June 1, 1977, all reasonably available measures of the applicable transportation control plan which do not have serious adverse social or economic effects; and

(B) completed, or agreed to complete by June 1, 1978, a detailed planning study that evidences public and local governmental involvement in accordance with paragraph (7) of this subsection and includes (i) examination of alternative measures and combinations of measures to attain and maintain the standards after June 1, 1977, (ii) a description of projects to be undertaken together with timetables and resource requirements, and (iii) identification and analysis of social, economic, and environmental effects including public health and energy conservation effects of such measures and projects.

(3) Each extension application shall be accompanied by adequate documentation of compliance with the requirements of paragraph (2) above, and shall include a description of the process for the development of an implementation plan for the extension period requested. Such plan shall be submitted no later than June 1, 1978. The plan shall at a minimum:

(A) identify the remaining emission reductions necessary for attainment of the national primary ambient air quality standards and the additional reasonably available measures to be implemented to accomplish these reductions;

(B) provide for the implementation of all reasonably available control measures as expeditiously as practicable;

(C) identify the financial and manpower resources to be committed to carrying out the plan;

(D) include written evidence that the State, the general purpose local government or governments, or a regional agency designated by general purpose local governments for such purpose, have adopted by statute, regulation, ordinance, or other legally enforceable document, the necessary requirements and schedules and timetables for compliance, and are committed to implement and enforce the appropriate elements of the plan;

(E) demonstrate (i) attainment of the national primary ambient air quality standards as expeditiously as practicable, but no later than May 31, 1982, or (ii) that such attainment is not possible within the extension period prior to May 31, 1982 despite implementation of all reasonably available control measures.

(4) (A) Within one hundred and twenty days following the submission of an application and all supporting materials, and after providing an opportunity for public hearing, the Administrator shall grant an extension, unless he determines that the requirements of this subsection have not been met.

(B) If the Administrator determines that the requirements of this subsection have not been met, including findings relating to the impacts of the transportation control measures upon the social, economic, energy conservation, and environmental welfare of the air quality control region, he shall notify the Governor of deficiencies in the application, including

his judgment as to acceptable dates for implementing measures included in the plan and as to the appropriate duration of an extension. The notification shall also specify a date for the submission of a revised application.

(5) Where the Administrator grants an extension based on an application meeting the requirements of paragraph (3) (E) (ii) of this subsection the Governor of the State may, on or after June 1, 1981, apply for a further extension in accordance with and subject to the requirements of this subsection. No extension under this paragraph or other portion of this Act may extend beyond May 31, 1987.

(6)(A) Where the Administrator denies an extension application or where the Governor of a State in which the national primary ambient air quality standards are not being met does not submit an application or revised application under this subsection, the Administrator shall, after consultation with appropriate State and local elected officials and after opportunity for public hearing in the affected State if no such hearing has been previously held, propose and promulgate an implementation plan (or portion thereof) meeting the requirements of this subsection. In proposing and promulgating such plan, the Administrator shall comply with the time requirements and schedules of this subsection. The United States court of appeals for the appropriate circuit may grant a stay of any provision of such plan upon application by a State pursuant to section 307 of this Act.

(B) The Administrator may delegate the implementation or enforcement of any portion of a promulgated plan to one or more general purpose local governments or a State.

(7)(A) The implementation plan required by paragraph (3) of this subsection shall be prepared in consultation with elected officials of local governments in the affected area, and where possible by an organization of elected officials of local governments recognized or designated by the State for this purpose. Where feasible, such organization shall be the metropolitan planning organization designated to conduct the continuing, cooperative and comprehensive transportation planning process for the area under section 134 of title 23, United States Code, or the organization responsible for the air quality maintenance planning process under regulations implementing this section, or the organization with both responsibilities.

(B) The preparation of the implementation plan required by paragraph (3) of this subsection shall be coordinated with the continuing, cooperative, and comprehensive transportation planning process required under section 134 of title 23, United States Code, and the air quality maintenance planning process required under this section, and such planning processes shall take into account the requirements of this subsection.

(8)(A) The Administrator shall make grants to any organization of local elected officials with transportation or air quality maintenance planning responsibilities recognized by the State under paragraph (7) of this subsection for payment of the reasonable costs of developing an air quality transportation control plan under this section.

(B) The amount granted to any organization under subparagraph (A) of this paragraph shall be 100 per centum of any additional costs of developing an air quality transportation control plan under this section for the first two fiscal years following receipt of the grant under this para-

graph, and shall supplement any funds available under Federal law to such organization for transportation or air quality maintenance planning. Grants under this paragraph shall not be used for construction.

(9) (A) The Administrator shall not approve any projects or award any grants authorized by this Act or any other authority of the Administrator after June 1, 1977, in any State in which any primary ambient air quality standard has not been attained, where transportation control measures are necessary for the attainment of such standard and the Governor has not applied for an extension in accordance with this subsection, or where the Governor has not submitted an implementation plan by June 1, 1978.

(B) In any area in which the State or, as the case may be, the general purpose local government or governments or any regional agency designated by such general purpose local governments for such purpose, is not implementing any requirement of an approved or promulgated plan under this section, including any condition of the extension under paragraph (2) of this subsection, the Administrator shall decrease funds or grants for any projects authorized by any authority of the Administrator by fifteen per centum for each year during the period any such requirement is not being implemented.

(10) (A) No department, agency, or instrumentality of the Federal Government shall (i) engage in, (ii) support in any way or provide financial assistance for, (iii) license or permit, or (iv) approve, any activity which does not conform to a plan after it has been approved or promulgated under this section. No metropolitan planning organization designated under section 134 of title 23, United States Code, shall give its approval to any project, program, or plan which does not conform to a plan approved or promulgated under this section. The assurance of conformity to such a plan shall be an affirmative responsibility of the head of such department, agency, or instrumentality.

(B) Each department, agency, or instrumentality of the Federal Government having authority to conduct or support any program with air-quality related transportation consequences shall give priority in the exercise of such authority, consistent with statutory requirements for allocation among States or other jurisdictions, to the implementation of those portions of plans prepared under this section to achieve and maintain the national primary ambient air quality standard. This paragraph extends to, but is not limited to, authority exercised under the Urban Mass Transportation Act, as amended, title 23 of the United States Code, and the Housing and Urban Development Act, as amended.

#### STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

SEC. 111. (a) For purposes of this section:

(1) The term "standard of performance" means a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction) the Administrator determines has been adequately demonstrated.

(2) The term "new source" means any stationary source, the construction or modification of which is commenced after

the publication of regulations (or, if earlier, proposed regulations) prescribing a standard of performance under this section which will be applicable to such source.

(3) The term "stationary source" means any building, structure, facility, or installation which emits or may emit any air pollutant.

(4) The term "modification" means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.

(5) The term "owner or operator" means any person who owns, leases, operates, controls, or supervises a stationary source.

(6) The term "existing source" means any stationary source other than a new source.

*(7) A conversion to coal (A) by reason of an order under section 2(a) of the Energy Supply and Environmental Coordination Act of 1974, or (B) which qualifies under section 113(d)(5)(A)(ii) of this Act shall not be deemed to be a modification for purposes of paragraphs (2) and (4) of this subsection.*

(b)(1)(A) The Administrator shall, within 90 days after the date of enactment of the Clean Air Amendments of 1970, publish (and from time to time thereafter shall revise) a list of categories of stationary sources. He shall include a category of sources in such list if he determines it may contribute significantly to air pollution which causes or contributes to the endangerment of public health or welfare.

(B) Within 120 days after the inclusion of a category of stationary sources in a list under subparagraph (A), the Administrator shall publish proposed regulations, establishing Federal standards of performance for new sources within such category. The Administrator shall afford interested persons an opportunity for written comment on such proposed regulations. After considering such comments, he shall promulgate, within 90 days after such publication, such standards with such modifications as he deems appropriate. The Administrator may, from time to time, revise such standards following the procedure required by this subsection for promulgation of such standards. Standards of performance or revisions thereof shall become effective upon promulgation.

(2) The Administrator may distinguish among classes, types, and sizes within categories of new sources for the purpose of establishing such standards.

(3) The Administrator shall, from time to time, issue information on pollution control techniques for categories of new sources and air pollutants subject to the provisions of this section.

(4) The provisions of this section shall apply to any new source owned or operated by the United States.

(c)(1) Each State may develop and submit to the Administrator a procedure for implementing and enforcing standards of performance for new sources located in such State. If the Administrator finds the State procedure is adequate, he shall delegate to such State any authority he has under this Act to implement and

enforce such standards (except with respect to new sources owned or operated by the United States).

(2) Nothing in this subsection shall prohibit the Administrator from enforcing any applicable standard of performance under this section.

(d)(1) The Administrator shall prescribe regulations which shall establish a procedure similar to that provided by section 110 under which each State shall submit to the Administrator a plan which (A) establishes emission standards for any existing source for any air pollutant (i) for which air quality criteria have not been issued or which is not included on a list published under section 108(a) or 112(b)(1)(A) but (ii) to which a standard of performance under subsection (b) would apply if such existing source were a new source, and (B) provides for the implementation and enforcement of such emission standards.

(2) The Administrator shall have the same authority—

(A) to prescribe a plan for a State in cases where the State fails to submit a satisfactory plan as he would have under section 110(c) in the case of failure to submit an implementation plan, and

(B) to enforce the provisions of such plan in cases where the State fails to enforce them as he would have under sections 113 and 114 with respect to an implementation plan.

(e) After the effective date of standards of performance promulgated under this section, it shall be unlawful for any owner or operator of any new source to operate such source in violation of any standard of performance applicable to such source.

#### NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

SEC. 112. (a) For purposes of this section—

(1) The term “hazardous air pollutant” means an air pollutant to which no ambient air quality standard is applicable and which in the judgment of the Administrator may cause, or contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness.

(2) The term “new source” means a stationary source the construction or modification of which is commenced after the Administrator proposes regulations under this section establishing an emission standard which will be applicable to such source.

(3) The terms “stationary source,” “modification,” “owner or operator” and “existing source” shall have the same meaning as such terms have under section 111(a).

(b)(1)(A) The Administrator shall, within 90 days after the date of enactment of the Clean Air Amendments of 1970, publish (and shall from time to time thereafter revise) a list which includes each hazardous air pollutant for which he intends to establish an emission standard under this section.

(B) Within 180 days after the inclusion of any air pollutant in such list, the Administrator shall publish proposed regulations establishing emission standards for such pollutant together with a notice of a public hearing within thirty days. Not later than 180 days after

such publication, the Administrator shall prescribe an emission standard for such pollutant, unless he finds, on the basis of information presented at such hearings, that such pollutant clearly is not a hazardous air pollutant. The Administrator shall establish any such standard at the level which in his judgment provides an ample margin of safety to protect the public health from such hazardous air pollutants.

(C) Any emission standard established pursuant to this section shall become effective upon promulgation.

(2) The Administrator shall, from time to time, issue information on pollution control techniques for air pollutants subject to the provisions of this section.

(c)(1) After the effective date of any emission standard under this section—

(A) no person may construct any new source or modify any existing source which, in the Administrator's judgment, will emit an air pollutant to which such standard applies unless the Administrator finds that such source if properly operated will not cause emissions in violation of such standard, and

(B) no air pollutant to which such standard applies may be emitted from any stationary source in violation of such standard, except that in the case of an existing source—

(i) such standard shall not apply until 90 days after its effective date, and

(ii) the Administrator may grant a waiver permitting such source a period of up to two years after the effective date of a standard to comply with the standard, if he finds that such period is necessary for the installation of controls and that steps will be taken during the period of the waiver to assure that the health of persons will be protected from imminent endangerment.

(2) The President may exempt any stationary source from compliance with paragraph (1) for a period of not more than two years if he finds that the technology to implement such standards is not available and the operation of such source is required for reasons of national security. An exemption under this paragraph may be extended for one or more additional periods, each period not to exceed two years. The President shall make a report to Congress with respect to each exemption (or extension thereof) made under this paragraph.

(d)(1) Each State may develop and submit to the Administrator a procedure for implementing and enforcing *emission standards for hazardous air pollutants* for stationary sources located in such State. If the Administrator finds the State procedure is adequate, he shall delegate to such State any authority he has under this Act to implement and enforce such standards (except with respect to stationary sources owned or operated by the United States).

(2) Nothing in this subsection shall prohibit the Administrator from enforcing any applicable *emission standard* under this section.

(e) *For purposes of this section the Administrator may promulgate a hazardous emission standard in terms of a design, equipment, or operational standard if he determines that such standard is necessary to control emissions of a hazardous pollutant or pollutants because, in the judgment of the Administrator, they cannot or should not be emitted through a conveyance designed and constructed to emit or capture such pollutants.*

## FEDERAL ENFORCEMENT

SEC. 113. (a)(1) Whenever, on the basis of any information available to him, the Administrator finds that any person is in violation of any requirement of an applicable implementation plan, the Administrator shall notify the person in violation of the plan and the State in which the plan applies of such finding. If such violation extends beyond the 30th day after the date of the Administrator's notification, the Administrator may issue an order requiring such person to comply with the requirements of such plan or he may bring a civil action in accordance with subsection (b).

(2) Whenever, on the basis of information available to him, the Administrator finds that violations of an applicable implementation plan are so widespread that such violations appear to result from a failure of the State in which the plan applies to enforce the plan effectively, he shall so notify the State. If the Administrator finds such failure extends beyond the thirtieth day after such notice, he shall give public notice of such finding. During the period beginning with such public notice and ending when such State satisfies the Administrator that it will enforce such plan (hereafter referred to in this section as "period of Federally assumed enforcement" the Administrator may enforce any requirement of such plan with respect to any person—

(A) by issuing an order to comply with such requirement, or

(B) by bringing a civil action under subsection (b).

(3) Whenever, on the basis of any information available to him, the Administrator finds that any person is in violation of section 111(e) (relating to new source performance standards), 112(c) (relating to standards for hazardous emissions), or 119(g) (relating to energy-related authorities), or is in violation of any requirement of section 114 (relating to inspections, etc.), he may issue an order requiring such person to comply with such section or requirement, or he may bring a civil action in accordance with subsection (b).

(4) An order issued under this subsection (other than an order relating to a violation of section 112) shall not take effect until the person to whom it is issued has had an opportunity to confer with the Administrator concerning the alleged violation. A copy of any order issued under this subsection shall be sent to the State air pollution control agency of any State in which the violation occurs. Any order issued under this subsection shall state with reasonable specificity the nature of the violation, specify a time for compliance which the Administrator determines is reasonable, taking into account the seriousness of the violation and any good faith efforts to comply with applicable requirements. In any case in which an order under this subsection (or notice to a violator under paragraph (1)) is issued to a corporation, a copy of such order (or notice) shall be issued to appropriate corporate officers.

[(b) The Administrator may commence a civil action for appropriate relief, including a permanent or temporary injunction, whenever any person—

[(1) violates or fails or refuses to comply with any order issued under subsection (a); or

[(2) violates any requirement of an applicable implementation plan (A) during any period of federally assumed enforcement, or

(B) more than 30 days after having been notified by the Administrator under subsection (a)(1) of a finding that such person is violating such requirement; or

[(3) violates section 111(e), 112(c), or 119(g); or

[(4) fails or refuses to comply with any requirement of section 114.

**Any action under this subsection may be brought in the district court of the United States for the district in which the defendant is located or resides or is doing business, and such court shall have jurisdiction to restrain such violation and to require compliance. Notice of the commencement of such action shall be given to the appropriate State air pollution control agency.]**

*(b) The Administrator shall commence a civil action for appropriate relief, including a permanent or temporary injunction, or to assess and recover a civil penalty of not more than \$10,000 per day of violation or both, whenever any person—*

*(1) violates or fails or refuses to comply with any order issued under subsection (a) or (d) of this section; or*

*(2) violates any requirement of an applicable implementation plan (A) during any period of federally assumed enforcement, or (B) more than thirty days after having been notified by the Administrator under subsection (a)(1) of a finding that such person is violating such requirement; or*

*(3) violates section 111(e), 112(c), 119(g), 120(b), or 120(g); or*

*(4) fails or refuses to comply with any requirement of section 114.*

*Any action under this subsection shall be brought in the district court of the United States for the district in which the defendant is located or resides or is doing business, and such court shall have jurisdiction to restrain such violation, to require compliance, and assess such penalty. Notice of the commencement of such action shall be given to the appropriate State air pollution control agency.*

*(c) (1) Any person who knowingly—*

*(A) violates any requirement of an applicable implementation plan (i) during any period of federally assumed enforcement, or (ii) more than 30 days after having been notified by the Administrator under subsection (a)(1) that such person is violating such requirement, or*

**[(B) violates or fails or refuses to comply with any order issued by the Administrator under subsection (a), or]**

*(B) violates or fails or refuses to comply with any order under subsection (a) or (d) of this section, or*

*(C) violates section 111(e), section 112(c), or section 119(g) shall be punished by a fine of not more than \$25,000 per day of violation, or by imprisonment for not more than one year, or by both. If the conviction is for a violation committed after the first conviction of such person under this paragraph, punishment shall be by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two years, or by both.*

*(2) Any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this Act or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this*

Act, shall upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than six months, or by both.

(3) For the purpose of this subsection, the term "person" shall mean, in addition to the definition contained in section 302(e) of this Act, any responsible corporate officer.

(d)(1) A State (or, after thirty days notice to the State, the Administrator) may issue an enforcement order for any stationary source which specifies a date for final compliance with an applicable emission limitation later than the date for attainment of any national ambient air quality standard specified in the applicable implementation plan: Provided, That (A) such order is issued after notice to the public (and, as appropriate to the Administrator) containing the content of the proposed order and opportunity for public hearing; (B) the order contains a schedule and timetable for compliance; (C) the order contains any interim control measures the State (or the Administrator) deems to be reasonable, and the order requires the emission monitoring and reporting by the source authorized to be required under sections 110(a)(2)(F) and 114(a)(1); (D) the order provides for final compliance with the emission limitation in the applicable implementation plan as expeditiously as practicable, but in no event later than January 1, 1979; and (E) in the case of a major emitting facility, the order provides that it will be amended no later than January 1, 1978, to contain a provision requiring the source to pay monthly a delayed compliance penalty, in an amount equal to that sum established by the Administrator pursuant to section 120 of this Act, in the event such major emitting facility fails to comply by January 1, 1979.

(2) An enforcement order proposed by a State shall issue under this subsection unless the Administrator, within ninety days of receipt of any proposed order, objects in writing to the issuance of such order as not consistent with the requirements of paragraph (1) of this subsection. If the Administrator so objects, he shall simultaneously proceed to issue an enforcement order in accordance with this subsection. Nothing in this section shall be construed as limiting the authority of a State or political subdivision to adopt and enforce a more stringent emission limitation or more expeditious schedule or timetable for compliance than that contained in an order by the Administrator.

(3) If any source not in compliance with an emission limitation in an applicable implementation plan gives written notification to the State (or the Administrator) that such source intends to comply by means of replacement of the facility, a complete change in production process, or a termination of operation, the State (or the Administrator) may issue an order under paragraph (1) of this subsection permitting the source to operate until January 1, 1979, without any interim schedule of compliance: Provided, That as a condition of such issuance, the owner or operator of such source shall post a bond or other surety in an amount equal to the cost of actual compliance by such facility and any economic value which may accrue to the owner or operator of such source by reason of the failure to comply. If a source for which the bond or other surety required by this paragraph has been posted fails to replace the facility, change the production process, or terminate the operations as specified in the order by the required date, the owner or operator shall immediately forfeit on the bond or other surety and the State (or the Administrator) shall have no discretion to modify the order under this paragraph or to compromise the bond or other surety.

(4) *In the case of a major emitting facility which proposes to comply with an applicable emission limitation through replacing existing production capacity with an innovative production process which will result in an emission reduction significantly greater than required by the emission limitation applicable to such facility, or with the installation of an innovative control technique that has a substantial likelihood for enabling the source to comply with the applicable emission limitation by achieving a significantly greater emission reduction than that required by the applicable emission limitation, or by achieving the required reduction with an innovative system that will have potential for industry-wide application at a significantly lower cost than the systems which have been determined by the Administrator to be adequately demonstrated, the date required for compliance applicable to such facility under paragraphs (1) and (3) of this subsection and section 120 of this Act shall be January 1, 1981.*

(5) (A) *In the case of a major emitting facility which—*

*(i) is ordered to convert to coal under an order pursuant to section 2(a) of the Energy Supply and Environmental Coordination Act of 1974, or*

*(ii) within one year after enactment of the Clean Air Amendments of 1976 gives notice of intent to convert to coal as its primary energy source because of actual or anticipated curtailment of natural gas supplies under any curtailment plan or schedule approved by the Federal Power Commission (or, in the case of intrastate natural gas supplies, approved by the appropriate State regulatory commission).*

*and which thereby would no longer be in compliance with an applicable emission limitation under an implementation plan, an enforcement order may be issued under paragraph (1) of this subsection for such facility which specifies a date for final compliance with the applicable emission limitation later than the date for attainment of any national ambient air quality standard specified in the applicable implementation plan: Provided, That the order provides for final compliance with the emission limitation in the applicable implementation plan as expeditiously as practicable, but in no event later than three years after the date of an order under section 2(a) of the Energy Supply and Environmental Coordination Act of 1974 or three years after giving notice under clause (ii) of this subparagraph, which date shall be the date required for compliance applicable to such facility under paragraphs (1) and (3) of this subsection and section 120 of this Act and in no event shall be later than July 1, 1980.*

*(B) In issuing an order under this paragraph, the State shall prescribe (and may from time to time modify) emission limitations, requirements respecting pollution characteristics of coal, or other enforceable measures for control of emissions for each facility to which such an order applies. Such limitations, requirements, and measures shall be those which the State determines must be complied with by the facility in order to assure (throughout the period before the date for final compliance established in the order) that the burning of coal by such source will not result in emissions which cause or contribute to concentrations of any air pollutant in excess of any national primary ambient air quality standard for such pollutant.*

*(C) The Administrator of the Federal Energy Administration may, by regulation, establish priorities under which manufacturers of continuous emission reduction systems necessary to carry out this paragraph*

shall provide such systems to users thereof, if he finds, after consultation with the States and the Administrator, that priorities must be imposed in order to assure that such systems are first provided to sources subject to orders under this paragraph in air quality control regions in which national primary ambient air quality standards have not been achieved. No regulation under this subparagraph may impair the obligation of any contract entered into before the date of enactment of the Clean Air Amendments of 1976.

(6) For the purposes of sections 110, 304, and 307 of this Act, any order issued or approved by the State (or the Administrator) pursuant to this subsection shall become part of the applicable implementation plan.

(7)(A) During the period of the enforcement order issued under this subsection and where the owner or operator is in compliance with the terms of such enforcement order, no other enforcement action pursuant to this section or section 304 of this Act shall be pursued against such owner or operator based upon noncompliance during the period the order is in effect with the emission limitation for the source covered by such order.

(B) The failure of any source subject to an enforcement order under this subsection to adhere to the schedule and timetable of compliance established under this subsection during the period of the order, shall make such source subject to the provisions of subsections (a), (b), and (c) of this section.

(8) No extension, postponement, waiver, or delay of any requirement of an implementation plan applicable to a major emitting facility shall be granted except in accordance with this subsection or section 110(f) of this Act: Provided, however, That neither this subsection nor section 120 of this Act shall be construed as limiting the authority of any State to revise any deadline for attainment of a national secondary ambient air quality standard.

(9) Any actions of the Administrator pursuant to this subsection, including any objection under paragraph (2) of this subsection, shall be considered a final action for purposes of section 307 of this Act.

(10) Any enforcement order issued under subsection (a) of this section or any consent decree in enforcement action which is in effect on the day of the Clean Air Amendments of 1976 shall remain in effect to the extent that such order or consent decree is not inconsistent with the requirements of this subsection and section 120 of this Act. Any such enforcement order issued under subsection (a) of this section or consent decree which provides for an extension beyond January 1, 1979, is void unless modified to comply with the requirements of this subsection.

(e) In any case where a person is in knowing violation of a provision of an implementation plan applicable to a stationary source, where there has been no request for an enforcement order extending the date of compliance concerning such source filed pursuant to subsection (d) of this section within one hundred and eighty days after enactment of the Clean Air Amendments of 1976 (unless such an order has been issued under this section without any such request), or where a person is in violation of the requirements of subsection (b) or (g) of section 120 of this Act, such person shall be punished by a fine of not more than \$25,000 per day of violation.

(f) If it is alleged that interference with the achievement or maintenance of any national primary or secondary ambient air quality standard will result from any major emitting facility in any region of a State other

than the State in which the facility is or may be located, the Administrator, at the request of the Governor of such other State, shall review the operation or proposed operation of such facility and, if necessary to prevent interference with the achievement or maintenance of any national primary or secondary ambient air quality standard in such other State, he shall take such measures, including seeking injunctive relief, as necessary to prevent such interference.

(g)(1) No major emitting facility shall be constructed or modified in any air quality control region or portion thereof in which any national ambient air quality standard is exceeded if such facility will emit air pollutants subject to such standard, so as to prevent the attainment or maintenance of such standard, except that a facility proposed for construction or modification at an existing site or plant owned or controlled by the owner or operator of such facility may be constructed or modified in such region if the owner or operator demonstrates to the satisfaction of the State that (A) the proposed facility will comply with the best available control technology (as defined in section 110(g)(6)(A) of this Act) applicable to such proposed facility before the proposed facility begins operation, (B) all existing sources owned or controlled by the owner or operator of the proposed facility in the same air quality control region as the proposed facility either are in compliance with all applicable emission limitations or are in compliance with an approved schedule and timetable for compliance under a provision of an applicable implementation plan under section 110 of this Act or an enforcement order issued under section 113(d) of this Act, (C) the total cumulative emissions from the existing sources at the proposed facility location and the proposed facilities will at no time increase, (D) the total allowable emissions from all existing and proposed sources at the proposed facility location will be sufficiently less than the total allowable emissions from the existing sources under the implementation plan or an approved schedule and timetable for compliance applicable prior to the request to construct or modify so as to represent reasonable further progress toward attainment of the applicable national ambient air quality standard, taking into account progress already made.

(2) After January 1, 1979, only a proposed facility where all existing sources owned or controlled by the owner or operator of the proposed facility in the same air quality control region as the proposed facility are in compliance with all emission limitations under an applicable implementation plan under section 110 of this Act shall be eligible for an exception under paragraph (1) of this subsection.

(3) The provisions of this subsection shall not be available where a State has not made any appropriate revision in the applicable implementation plan to include the emission limitations established for sources at the proposed facility location under paragraph (1)(D) of this subsection.

#### INSPECTIONS, MONITORING, AND ENTRY

SEC. 114. (a) For the purpose (i) of developing or assisting in the development of any implementation plan under section 110 or 111(d), any standard of performance under section 111, or any emission standard under section 112, (ii) of determining whether any person is in violation of any such standard or any requirement of such a plan, or [(iii) carrying out section 119 or 303] (iii) carrying out section 119, 303, or 314.

(1) the Administrator may require the owner or operator of any emission source to (A) establish and maintain such records, (B) make such reports, (C) install, use, and maintain such monitoring equipment or methods, (D) sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe), and (E) provide such other information, as he may reasonably require; and

(2) the Administrator or his authorized representative, upon presentation of his credentials—

(A) shall have a right of entry to, upon, or through any premises in which an emission source is located or in which any records required to be maintained under paragraph (1) of this section are located, [and]

(B) may at reasonable times have access to and copy any records, inspect any monitoring equipment or method required under paragraph (1), and sample any emissions which the owner or operator of such source is required to sample under paragraph (1) [ ], and

(C) may at reasonable times have access to and copy any employer's records relating to matters being investigated pursuant to section 314.

(b)(1) Each State may develop and submit to the Administrator a procedure for carrying out this section in such State. If the Administrator finds the State procedure is adequate, he may delegate to such State any authority he has to carry out this section (except with respect to new sources owned or operated by the United States).

(2) Nothing in this subsection shall prohibit the Administrator from carrying out this section in a State.

(c) Any records, reports or information obtained under subsection (a) shall be available to the public, except that upon a showing satisfactory to the Administrator by any person that records, reports, or information, or particular part thereof (other than emission data) to which the Administrator has access under this section if made public, would divulge methods or processes entitled to protection as trade secrets of such person, the Administrator shall consider such record, report, or information or particular portion thereof confidential in accordance with the purposes of section 1905 of title 18 of the United States Code, except that such record, report, or information may be disclosed to other officers, employees, or authorized representatives of the United States concerned with carrying out this Act or when relevant in any proceeding under this Act.

#### ABATEMENT BY MEANS OF CONFERENCE PROCEDURE IN CERTAIN CASES

[SEC. 115.(a) The pollution of the air in any State or States which endangers the health or welfare of any persons and which is covered by subsection (b) or (c) shall be subject to abatement as provided in this section.

[(b)(1) Whenever requested by the Governor of any State, a State air pollution control agency, or (with the concurrence of the Governor and the State air pollution control agency for the State in which the municipality is situated) the governing body of any municipality, the Administrator shall, if such request refers to

air pollution which is alleged to endanger the health or welfare of persons in a State other than that in which the discharge or discharges (causing or contributing to such pollution) originate, give formal notification thereof to the air pollution control agency of the municipality where such discharge or discharges originate, to the air pollution control agency of the State in which such municipality is located, and to the interstate air pollution control agency, if any, in whose jurisdictional area such municipality is located, and shall call promptly a conference of such agency or agencies and of the air pollution control agencies of the municipalities which may be adversely affected by such pollution, and the air pollution control agency, if any, of each State, or for each area, in which any such municipality is located.

[(2) Whenever requested by the Governor of any State, a State air pollution control agency, or (with the concurrence of the Governor and the State air pollution control agency for the State in which the municipality is situated) the governing body of any municipality, the Administrator shall, if such request refers to alleged air pollution which is endangering the health or welfare of persons only in the State in which the discharge or discharges (causing or contributing to such pollution) originate and if a municipality affected by such air pollution, or the municipality in which such pollution originates, has either made or concurred in such request, give formal notification thereof to the State air pollution control agency, to the air pollution control agencies of the municipality where such discharge or discharges originate, and of the municipality or municipalities alleged to be adversely affected thereby, and to any interstate air pollution control agency, whose jurisdictional area includes any such municipality and shall promptly call a conference of such agency or agencies, unless in the judgment of the Administrator, the effect of such pollution is not of such significance as to warrant exercise of Federal jurisdiction under this section.

[(3) The Administrator may, after consultation with State officials of all affected States, also call such a conference whenever, on the basis of reports, surveys, or studies, he has reason to believe that any pollution referred to in subsection (a) is occurring and is endangering the health and welfare of persons in a State other than that in which the discharge or discharges originate. The Administrator shall invite the cooperation of any municipal, State, or interstate air pollution control agencies having jurisdiction in the affected area on any surveys or studies forming the basis of conference action.

[(4) A conference may not be called under this subsection with respect to an air pollutant for which (at the time the conference is called) a national primary or secondary ambient air quality standard is in effect under section 109.

[(c) Whenever the Administrator, upon receipt of reports, surveys, or studies from any duly constituted international agency, has reason to believe that any pollution referred to in subsection (a) which endangers the health or welfare of persons in a foreign country is occurring, or whenever the Secretary of State requests him to do so with respect to such pollution which the Secretary of State alleges is of such a nature, the Administrator shall give formal notification thereof to the air pollution control agency of the municipality where

such discharge or discharges originate, to the air pollution control agency of the State in which such municipality is located, and to the interstate air pollution control agency, if any, in the jurisdictional area of which such municipality is located, and shall call promptly a conference of such agency or agencies. The Administrator shall invite the foreign country which may be adversely affected by the pollution to attend and participate in the conference, and the representative of such country shall, for the purpose of the conference and any further proceeding resulting from such conference, have all the rights of a State air pollution control agency. This subsection shall apply only to a foreign country which the Administrator determines has given the United States essentially the same rights with respect to the prevention or control of air pollution occurring in that country as is given that country by this subsection.

[(d)(1) The agencies called to attend any conference under this section may bring such persons as they desire to the conference. The Administrator shall deliver to such agencies and make available to other interested parties, at least thirty days prior to any such conference, a Federal report with respect to the matters before the conference, including data and conclusions or findings (if any); and shall give at least thirty days' prior notice of the conference date to any such agency, and to the public by publication on at least three different days in a newspaper or newspapers of general circulation in the area. The chairman of the conference shall give interested parties an opportunity to present their views to the conference with respect to such Federal report, conclusions or findings (if any), and other pertinent information. The Administrator shall provide that a transcript be maintained of the proceedings of the conference and that a copy of such transcript be made available on request of any participant in the conference at the expense of such participant.

[(2) Following this conference the Administrator shall prepare and forward to all air pollution control agencies attending the conference a summary of conference discussions including (A) occurrence of air pollution subject to abatement under this Act; (B) adequacy of measures taken toward abatement of the pollution; and (C) nature of delays, if any, being encountered in abating the pollution.

[(e) If the Administrator believes, upon the conclusion of the conference or thereafter, that effective progress toward abatement of such pollution is not being made and that the health or welfare of any persons is being endangered, he shall recommend to the appropriate State, interstate, or municipal air pollution control agency (or to all such agencies) that the necessary remedial action be taken. The Administrator shall allow at least six months from the date he makes such recommendations for the taking of such recommended action.

[(f) (1) If, at the conclusion of the period so allowed, such remedial action or other action which in the judgment of the Administrator is reasonably calculated to secure abatement of such pollution has not been taken, the Administrator shall call a public hearing, to be held in or near one or more of the places where the discharge or discharges causing or contributing to such pollution originated, before a hearing board of five or more persons appointed by the Administrator. Each State in which any discharge causing or

contributing to such pollution originates and each State claiming to be adversely affected by such pollution shall be given an opportunity to select one member of such hearing board and each Federal department, agency, or instrumentality having a substantial interest in the subject matter as determined by the Administrator shall be given an opportunity to select one member of such hearing board, and one member shall be a representative of the appropriate interstate air pollution agency if one exists, and not less than a majority of such hearing board shall be persons other than officers or employees of the Environmental Protection Agency. At least three weeks' prior notice of such hearing shall be given to the State, interstate, and municipal air pollution control agencies called to attend such hearing and to the alleged polluter or polluters. All interested parties shall be given a reasonable opportunity to present evidence to such hearing board.

[(2) On the basis of evidence presented at such hearing, the hearing board shall make findings as to whether pollution referred to in subsection (a) is occurring and whether effective progress toward abatement thereof is being made. If the hearing board finds such pollution is occurring and effective progress toward abatement thereof is not being made it shall make recommendations to the Administrator concerning the measures, if any, which it finds to be reasonable and suitable to secure abatement of such pollution.

[(3) The Administrator shall send such findings and recommendations to the person or persons discharging any matter causing or contributing to such pollution; to air pollution control agencies of the State or States and of the municipality or municipalities where such discharge or discharges originate; and to any interstate air pollution control agency whose jurisdictional area includes any such municipality, together with a notice specifying a reasonable time (not less than six months) to secure abatement of such pollution.

[(g) If action reasonably calculated to secure abatement of the pollution within the time specified in the notice following the public hearing is not taken the Administrator—

[(1) in the case of pollution of air which is endangering the health or welfare of persons (A) in a State other than that in which the discharge or discharges (causing or contributing to such pollution) originate, or (B) in a foreign country which has participated in a conference called under subsection (c) of this section and in all proceedings under this section resulting from such conference, may request the Attorney General to bring a suit on behalf of the United States in the appropriate United States district court to secure abatement of the pollution;

[(2) in the case of pollution of air which is endangering the health or welfare of persons only in the State in which the discharge or discharges (causing or contributing to such pollution) originate, at the request of the Governor of such State, shall provide such technical and other assistance as in his judgment is necessary to assist the State in judicial proceedings to secure abatement of the pollution under State or local law or, at the request of the Governor of such State, shall request the Attorney General to bring suit on behalf of the United States in the appropriate United States district court to secure abatement of the pollution.

[(h) The court shall receive in evidence in any suit brought in a United States court under subsection (g) of this section a transcript of the proceedings before the board and a copy of the board's recommendations and shall receive such further evidence as the court in its discretion deems proper. The court, giving due consideration to the practicability of complying with such standards as may be applicable and to the physical and economic feasibility of securing abatement of any pollution proved, shall have jurisdiction to enter such judgment, and orders enforcing such judgment, as the public interest and the equities of the case may require.

[(i) Members of any hearing board appointed pursuant to subsection (f) who are not regular full-time officers or employees of the United States shall, while participating in the hearing conducted by such board or otherwise engaged on the work of such board, be entitled to receive compensation at a rate fixed by the Administration, but not exceeding \$100 per diem, including traveltime, and while away from their homes or regular places of business they may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by law (5 U.S.C. 73b-2) for persons in the Government service employed intermittently.

[(j)(1) In connection with any conference called under this section, the Administrator is authorized to require any person whose activities result in the emission of air pollutants causing or contributing to air pollution to file with him, in such form as he may prescribe, a report, based on existing data, furnishing to the Administrator such information as may reasonably be required as to the character, kind, and quantity of pollutants discharged and the use of devices or other means to prevent or reduce the emission of pollutants by the person filing such a report. After a conference has been held with respect to any such pollution the Administrator shall require such reports from the person whose activities result in such pollution only to the extent recommended by such conference. Such report shall be made under oath or otherwise, as the Administrator may prescribe, and shall be filed with the Administrator within such reasonable period as the Administrator may prescribe, unless additional time be granted by the Administrator. No person shall be required in such report to divulge trade secrets or secret processes and all information reported shall be considered confidential for the purposes of section 1905 of title 18 of the United States Code.

[(2) If any person required to file any report under this subsection shall fail to do so within the time fixed by the Administrator for filing the same, and such failure shall continue for thirty days after notice of such default, such person shall forfeit to the United States the sum of \$100 for each and every day of the continuance of such failure, which forfeiture shall be payable into the Treasury of the United States, and shall be recoverable in a civil suit in the name of the United States brought in the district where such person has his principal office or in any district in which he does business: *Provided*, that the Administrator may upon application therefore remit or mitigate any forfeiture provided for under this subsection and he shall have authority to determine the facts upon all such applications.

[(3) It shall be the duty of the various United States attorneys, under the direction of the Attorney General of the United States, to prosecute for the recovery of such forfeitures.

[(k) No order or judgment under this section, or settlement, compromise, or agreement respecting any action under this section (whether or not entered or made before the date of enactment of the Clean Air Amendments of 1970) shall relieve any person of any obligation to comply with any requirement of an applicable implementation plan, or with any standard prescribed under section 111 or 112.]

*Sec. 115. (a) Whenever the Administrator, upon receipt of requests, reports, surveys, or studies from any duly constituted international agency, has reason to believe that any air pollutant or pollutants emitted in the United States endanger the health or welfare of persons in a foreign country, or whenever the Secretary of State requests him to do so with respect to such pollutant or pollutants which the Secretary of State alleges is of such a nature, the Administrator shall give formal notification thereof to such Governor of the State in which such emissions originate.*

*(b) The notice of the Administrator shall operate as finding under clause (ii) of subparagraph (H) of subsection (a) (2) of section 110 of this Act and any foreign country adversely affected by the emission of pollutant or pollutants shall be invited to appear at any public hearing associated with any revision of the appropriate portion of the applicable implementation plan.*

*(c) This section shall apply only to a foreign country which the Administrator determines has given the United States essentially the same rights with respect to the prevention or control of air pollution occurring in that country as is given that country by this section.*

*(d) Recommendations issued following any abatement conference conducted prior to the enactment of the Clean Air Amendments of 1976 shall remain in effect with respect to any pollutant for which no national ambient air quality standard has been established under section 109 of this Act. However, the Administrator, after consultation with all agencies which were party to the conference, may rescind any such recommendation on grounds of obsolescence.*

#### RETENTION OF STATE AUTHORITY

SEC. 116. Except as otherwise provided in sections 119(c), (e), and (f), 209, 211(c)(4), [and] 233 and 237 (preempting certain State regulation of moving sources) nothing in this Act shall preclude or deny the right of any State or political subdivision thereof to adopt or enforce (1) any standard or limitation respecting emissions of air pollutants or (2) any requirement respecting control or abatement of air pollution; except that if an emission standard or limitation is in effect under an applicable implementation plan or under section 111 of 112, such State or political subdivision may not adopt or enforce any emission standard or limitation which is less stringent than the standard or limitation under such plan or section.

#### PRESIDENT'S AIR QUALITY ADVISORY BOARD AND ADVISORY COMMITTEES

SEC. 117. [(a)(1) There is hereby established in the Environmental Protection Agency an Air Quality Advisory Board, composed of the Administrator or his designee, who shall be Chairman, and fifteen members appointed by the President, none of whom shall be Federal officers or employees. The appointed members, having due

regard for the purposes of this Act, shall be selected from among representatives of various State, interstate, and local governmental agencies, of public or private interests contributing to, affected by, or concerned with air pollution, and of other public and private agencies, organizations, or groups demonstrating an active interest in the field of air pollution prevention and control, as well as other individuals who are expert in this field.

[(2) Each member appointed by the President shall hold office for a term of three years, except that (A) any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term, and (B) the terms of office of the members first taking office pursuant to this subsection shall expire as follows: five at the end of one year after the date of appointment, five at the end of two years after such date, and five at the end of three years after such date, as designated by the President at the time of appointment, and (C) the term of any member under the preceding provisions shall be extended until the date on which his successor's appointment is effective. None of the members shall be eligible for reappointment within one year after the end of his preceding term, unless such term was for less than three years.]

[(b) The Board shall advise and consult with the Administrator on matters of policy relating to the activities and functions of the Administrator under this Act and make such recommendations as it deems necessary to the President.]

[(c) Such clerical and technical assistance as may be necessary to discharge the duties of the Board and such other advisory committees as hereinafter authorized shall be provided from the personnel of the Environmental Protection Agency.]

[(d)] (a) In order to obtain assistance in the development and implementation of the purposes of this Act, including air quality criteria, recommended control techniques, standards, research and development, and to encourage the continued efforts on the part of industry, to improve air quality and to develop economically feasible methods for the control and abatement of air pollution, the Administrator shall from time to time establish advisory committees. Committee members shall include, but not be limited to, persons who are knowledgeable concerning air quality from the standpoint of health, welfare, economics, or technology.

[(e)] (b) The members of [the Board and] any other advisory committees appointed pursuant to this Act who are not officers or employees of the United States while attending conferences or meetings [of the Board] or while otherwise serving at the request of the Administrator, shall be entitled to receive compensation at a rate to be fixed by the Administrator, but not exceeding \$100 per diem, including traveltime, and while away from their homes or regular places of business they may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of title 5 of the United States Code for persons in the Government service employed intermittently.

[(f)] (c) Prior to—

- (1) issuing criteria for an air pollutant under section 108(a)(2),
- (2) publishing any list under section 111(b)(1)(A) or 112(b)(1)(A),

(3) publishing any standard under section 111(b)(1)(B) or section 112(b)(1)(B), or

(4) publishing any regulation under section 202(a), the Administrator shall, to the maximum extent practicable within the time provided, consult with appropriate advisory committees, independent experts, and Federal departments and agencies.

#### CONTROL OF POLLUTION FROM FEDERAL FACILITIES

SEC. 118. Each department, agency, and instrumentality of the executive, legislative, and judicial branches of the Federal Government (1) having jurisdiction over any property of facility, or (2) engaged in any activity resulting, or which may result in the discharge of air pollutants, shall **[**comply with Federal, State, interstate, and local requirements respecting control and abatement of air pollution to the same extent that any person is subject to such requirements.**]** *be subject to, and comply with, all Federal, State, interstate, and local requirements, both substantive and procedural (including any requirement for permits or reporting or any provisions for injunctive relief and such sanctions as may be imposed by a court to enforce such relief), respecting control and abatement of air pollution in the same manner, and to the same extent, as any person is subject to such requirements, including the payment of reasonable service charges. Neither the United States nor any agent, employee, nor officer thereof shall be immune or exempt from any process or sanction of any State or Federal court with respect to the enforcement of any such injunctive relief.* The President may exempt any emission source of any department, agency, or instrumentality in the executive branch from compliance with such a requirement if he determines it to be in the paramount interest of the United States to do so, except that no exemption may be granted from section 111, and an exemption from section 112 may be granted only in accordance with section 112(c). No such exemption shall be granted due to lack of appropriation unless the President shall have specifically requested such appropriation as a part of the budgetary process and the Congress shall have failed to make available such requested appropriation. Any exemption shall be for a period not in excess of one year, but additional exemptions may be granted for periods not to exceed one year upon the President's making a new determination. The President shall report each January to the Congress all exemptions from the requirements of this section granted during the preceding calendar year, together with his reason for granting each such exemption.

#### **[**ENERGY-RELATED AUTHORITY

**[**Sec. 119(a) For purposes of this section:

**[**(1) The term "stationary source fuel or emission limitation" means any emission limitation, schedule or timetable of compliance, or other requirement, which is prescribed under this Act (other than this section, or section 111(b), 112, or 303) or contained in an applicable implementation plan (other than a requirement imposed under authority described in section 110(a)(2)(F)(v)), and which limits, or is designed to limit, stationary source emissions resulting from com-

bustion of fuels, including a prohibition on, or specification of, the use of any fuel of any type, grade, or pollution characteristic.

[(2) The term "air pollution requirement" means any emission limitation, schedule or timetable for compliance, or other requirement, which is prescribed under any Federal, State, or local law or regulation, including this Act (except for any requirement prescribed under subsection (c) or (d) of this section, section 110(a)(2)(F)(v), or section 303), and which limits stationary source emissions resulting from combustion of fuels (including a prohibition on, or specification of, the use of any fuel of any type, grade, or pollution characteristic).

[(3) The terms "stationary source" and "source" have the same meaning as the term "stationary source" has under section 111(a)(3); except that such terms include any owner or operator (as defined in section 111(a)(5)) of such source.

[(4) The term "coal" includes coal derivatives.

[(5) The term "primary standard condition" means a limitation, requirement, or other measure, prescribed by the Administrator under subsection (d)(2)(A) of this section.

[(6) The term "regional limitation" means the requirement of subsection (c)(2)(D) of this section.

(b)(1)(A) The Administrator may, for any period beginning on or after the date of enactment of this section and ending on or before June 30, 1975, temporarily suspend a stationary source fuel or emission limitation as it applies to any person—

[(i) if the Administrator finds that such person will be unable to comply with any such limitation during such period solely because of unavailability of types or amounts of fuels (unless such unavailability results from an order under section 2(a) of the Energy Supply and Environmental Coordination Act of 1974), or

[(ii) if such person is a source which is described in subsection (c)(1) (A) or (B) of this section and which has converted to coal, and the Administrator finds that the source will be able to comply during the period of the suspension with all primary standard conditions which will be applicable to such source.

[Any suspension under this paragraph, the imposition of any interim requirement on which suspension is conditioned under paragraph (3) of this subsection, and the imposition of any primary standard condition which relates to such suspension, shall be exempted from any procedural requirements set forth in this Act or in any other provision of Federal, State, or local law: except as provided in subparagraph (B) of this paragraph.

[(B) The Administrator shall give notice to the public and afford interested persons an opportunity for written and oral presentations of data, views, and arguments prior to issuing a suspension under subparagraph (A), or denying an application for such a suspension, unless otherwise provided by the Administrator for good cause found and published in the Federal Register. In any case, before issuing such a suspension, he shall give actual notice to the Governor of the State in which the affected source or sources are located, and to appropriate local governmental officials (as determined by the Administrator). The issuing or denial of such a suspension, the imposition of an interim

requirement, and the imposition of any primary standard condition shall be subject to judicial review only on the grounds specified in paragraph (2)(B), (2)(C), or (2)(D), of section 706 of title 5, United States Code, and shall not be subject to any proceeding under section 304(a)(2) or 307 (b) and (c) of this Act.

[(2) In issuing any suspension under paragraph (1), the Administrator is authorized to act on his own motion or upon application by any person (including a public officer or public agency).

[(3) Any suspension under paragraph (1) shall be conditioned upon compliance with such interim requirements as the Administrator determines are reasonable and practicable. Such interim requirements shall include, but need not be limited to, (A) a requirement that the persons receiving the suspension comply with such reporting requirements as the Administrator determines may be necessary, (B) such measures as the Administrator determines are necessary to avoid an imminent and substantial endangerment to health of persons, and (C) in the case of a suspension under paragraph (1)(A)(i), requirements that the suspension shall be inapplicable during any period during which fuels which would enable compliance with the suspended stationary source fuel or emission limitations are in fact reasonably available (as determined by the Administrator) to such person.

[(c)(1) Except as provided in paragraph (2) of this subsection, the Administrator shall issue a compliance date extension to any fuel-burning stationary source—

[(A) which is prohibited from using petroleum products or natural gas by reason of an order which is in effect under section 2 (a) and (b) of the Energy Supply and Environmental Coordination Act of 1974, or

[(B) which the Administrator determines began conversion to the use of coal as its primary energy source during the period beginning on September 15, 1973, and ending on March 15, 1974, and which, on or after September 15, 1973, converts to the use of coal as its primary energy source. If a compliance date extension is issued to a source, such source shall not, until January 1, 1979, be prohibited, by reason of the application of any air pollution requirement, from burning coal which is available to such source, except as provided in subsection (d)(3). For purposes of this paragraph, the term "began conversion" means action by the source during the period beginning on September 15, 1973, and ending on March 15, 1974 (such as entering into a contract binding on such source for obtaining coal, or equipment or facilities to burn coal; or applying for an air pollution variance to enable such source to burn coal) which the Administrator finds evidences a decision (made prior to March 15, 1974) to convert to burning coal as a result of the unavailability of an adequate supply of fuels required for compliance with the applicable implementation plan, and a good effort to expeditiously carry out such decision.

[(2)(A) A compliance date extension under paragraph (1) of this subsection may be issued to a source only if—

[(1) the Administrator finds that such source will not be able to burn coal which is available to such source in compliance with all applicable air pollution requirements without a compliance date extension,

[(ii) the Administrator finds that the source will be able during the period of the compliance date extension to comply with all the primary standard conditions which are required under subsection (d)(2) to be applicable to such source, and with the regional limitation if applicable to such source, and

[(iii) the source has submitted to the Administrator a plan for compliance for such source which the Administrator has approved.

[A plan submitted under clause (iii) of the preceding sentence shall be approved only if it meets the requirements of regulations prescribed under subparagraph (B). The Administrator shall approve or disapprove any such plan within 60 days after such plan is submitted.

[(B) Not later than 90 days after the date of enactment of this section, the Administrator shall prescribe regulations requiring that any source to which a compliance date extension applies submit and obtain approval of its means for and schedule of compliance with the requirements of subparagraph (C) of this paragraph. Such regulations shall include requirements that such schedules shall include dates by which any such source must—

[(i) enter into contracts (or other obligations enforceable against such source) which the Administrator has approved as being adequate to provide for obtaining a long-term supply of coal which enables such source to achieve the emission reduction required by subparagraph (C), or

[(ii) if coal which enables such source to achieve such emission reduction is not available to such source, enter into contracts (or other obligations enforceable against such source) which the Administrator has approved as being adequate to provide for obtaining (I) a long-term supply of other coal, and (II) continuous emission reduction systems necessary to permit such source to burn such coal and to achieve the degree of emission reduction required by subparagraph (C).

[Regulations under this subparagraph shall provide that contracts or other obligations required to be approved under this subparagraph must be approved before they are entered into (except that a contract or obligation which was entered into before the date of enactment of this section may be approved after such date).

[(C) Regulations under subparagraph (B) shall require that the source achieve the most stringent degree of emission reduction that such source would have been required to achieve under the applicable implementation plan which was in effect on the date of submittal (under subparagraph (B) of this paragraph) of the means for and schedule of compliance (or if no applicable implementation plan was in effect on such date, under the first applicable implementation plan which takes effect after such date). Such degree of emission reduction shall be achieved as soon as practicable, but not later than December 31, 1978; except that, in the case of a source for which a continuous emission reduction system is required for sulfur-related emissions, reduction of such emissions shall be achieved on a date designated by the Administrator (but not later than January 1, 1979). Such regulations shall also include such interim requirements as the Administrator determines are reasonable and practicable, including

requirements described in subparagraphs (A) and (B) of subsection (b)(3) and requirements to file progress reports.

[(D) A source which is issued a compliance date extension under this subsection, and which is located in an air quality control region in which a national primary ambient air quality standard for an air pollutant is not being met, may not emit such pollutant in amounts which exceed any emission limitation (and may not violate any other requirement) which applies to such source, under the applicable implementation plan for such pollutant. For purposes of this subparagraph, applicability of any such limitation or requirement to a source shall be determined without regard to this subsection or subsection (b).

[(3) A source to which this subsection applies may, upon the expiration of a compliance date extension, receive a one-year postponement of the application of any requirement of an applicable implementation plan under the conditions and in the manner provided in section 110(f).

[(4) The Administrator shall give notice to the public and afford an opportunity for oral and written presentations of data, views, and arguments before issuing any compliance date extension, prescribing any regulation under paragraph (2) of this subsection, making any finding under paragraph (2)(A) of this subsection, imposing any requirement on a source pursuant to paragraph (2) or any regulation thereunder, prescribing a primary standard condition under subsection (d)(2) which applies to a source to which an extension is issued under this subsection, or acting on any petition under subsection (d)(2)(C).

[(d)(1)(A) Whenever the Federal Energy Administrator issues an order under section 2(a) of the Energy Supply and Environmental Coordination Act of 1974 which will not apply after June 30, 1975, the Administrator of the Environmental Protection Agency shall certify to him—

[(i) in the case of a source to which no suspension will be issued under subsection (b), the earliest date on which such source will be able to burn coal and to comply with all applicable air pollution requirements, or

[(ii) in the case of a source to which a suspension will be issued under subsection (b) of this section, the date determined under paragraph (2)(B) of this subsection.

[(B) Whenever the Federal Energy Administrator issues an order under section 2(a) of such Act which will apply after June 30, 1975, the Administrator of the Environmental Protection Agency shall notify him if such source will be able, on and after July 1, 1975, to burn coal and to comply with all applicable air pollution requirements without a compliance date extension under subsection (c). If such notification is not given—

[(1) in the case of a source which is eligible for a compliance date extension under subsection (c), the Administrator of the Environmental Protection Agency shall certify to the Federal Energy Administrator the date determined under paragraph (2)(B) of this subsection, and

[(ii) in the case of a source which is not eligible for such an extension, the Administrator of the Environmental Protection

Agency shall certify to the Federal Energy Administrator the earliest date on which the source will be able to burn coal and to comply with all applicable air pollution requirements.

[(2)(A) The Administrator of the Environmental Protection Agency, after consultation with appropriate States, shall prescribe (and may from time to time, after such consultation, modify) emission limitations, requirements respecting pollution characteristics of coal, or other enforceable measures for control of emissions, for each source to which a suspension under subsection (b)(1)(A)(ii) will apply, and for each source to which a compliance date extension under subsection (c)(1) will apply. Such limitations, requirements, and measures shall be those which he determines must be complied with by the source in order to assure (throughout the period that the suspension or extension will be in effect) that the burning of coal by such source will not result in emissions which cause or contribute to concentrations of any air pollutant in excess of any national primary ambient air quality standard for such pollutant.

[(B) Whenever the Administrator prescribes a limitation, requirement, or measure under subparagraph (A) of this paragraph with respect to a source, he shall determine the earliest date on which such source will be able to comply with such limitation, requirement, or measure, and with any regional limitation applicable to such source.

[(C) An air pollution control agency may petition the Administrator (A) to modify any limitation, requirement, or other measure under this paragraph so as to assure compliance with the requirements of this paragraph, or (B) to issue to the Federal Energy Administration the certification described in paragraph (3)(B) on the grounds described in clause (iii) thereof. The Administrator shall take the action requested in the petition, or deny the petition, within 90 days after the date of receipt of the petition.

[(3) (A) If the Administrator determines that a source to which a suspension under subsection (b)(1)(A)(ii) or to which a compliance date extension under subsection (c)(1) applies is not in compliance with any primary standard condition, or that a source to which a compliance date extension applies is not in compliance with a regional limitation applicable to it, he shall (except as provided in subparagraph (B)) either—

[(i) enforce compliance with such condition or limitation under section 113, or

[(ii) (after notice to the public and affording an opportunity for interested persons to present data, views, and arguments, including oral presentations, to the extent practicable) revoke such suspension or compliance date extension.

[(B) If the Administrator finds that for any period—

[(i) a source, to which an order under section 2(a) of the Energy Supply and Environmental Coordination Act of 1974 applies, will be unable to comply with a primary standard condition or regional limitation,

[(ii) such a source will not be in compliance with such a condition or limitation, but such condition or limitation cannot be enforced because of a court order restraining its enforcement, or

[(iii) the burning of coal by such a source will result in an increase in emissions of any air pollutant for which national ambient air quality standards have not been promulgated (or an air pollutant which is transformed in the atmosphere into an air pollutant for which such a standard has not been promulgated), and that such increase may cause (or materially contribute to) a significant risk to public health,

he shall notify the Federal Energy Administrator of his finding and certify the period for which such order under such section 2(a) shall not be in effect with respect to such source. Subject to the conditions of the preceding sentence, such certification may be modified from time to time. For purposes of this subsection, subsection (c), and section 2 (a) or (b) of the Energy Supply and Environmental Coordination Act of 1974, a source shall be considered unable to comply with an air pollution requirement (including a primary standard condition or regional limitation) only if necessary technology or other alternative methods of control are not available or have not been available for a sufficient period of time.

[(4) Nothing in this Act shall prohibit a State, political subdivision of a State, or agency or instrumentality of either, from enforcing any primary standard condition or regional limitation.

[(5) A conversion to coal (A) to which a suspension under subsection (b) or a compliance date extension under subsection (c) applies or (B) by reason of an order under section 2(a) of the Energy Supply and Environmental Coordination Act of 1974 shall not be deemed to be a modification for purposes of section 111(a) (2) and (4) of this Act.

[(e) The Administrator may, by rule, establish priorities under which manufacturers of continuous emission reduction systems necessary to carry out subsection (c) shall provide such systems to users thereof, if he finds that priorities must be imposed in order to assure that such systems are first provided to sources in air quality control regions in which national primary ambient air quality standards have not been achieved. No rule under this subsection may impair the obligation of any contract entered into before the date of enactment of this section. To the extent necessary to carry out this section, the Administrator may prohibit any State or political subdivision of a State, or an agency or instrumentality of either, from requiring any person to use a continuous emission reduction system for which priorities have been established under this subsection, except in accordance with such priorities.

[(f) No State, political subdivision of a State, or agency or instrumentality of either, may require any person to whom a suspension has been issued under subsection (b)(1) to use any fuel the unavailability of which is the basis of such person's suspension (except that this subsection shall not apply to requirements under subsection (b)(3) or subsection (d)(2)).

[(g) (1) It shall be unlawful for any person to whom a suspension has been issued under subsection (b)(1) to violate any requirement on which the suspension is conditioned pursuant to subsection (b)(3) or any primary standard condition applicable to him.

[(2) It shall be unlawful for any person to fail to comply with any requirement under subsection (c), or any regulation, plan, or schedule

thereunder (including a primary standard condition or regional limitation), which is applicable to such person.

[(3) It shall be unlawful for any person to violate any rule under subsection (e).

[(4) It shall be unlawful for any person to fail to comply with an interim requirement under subsection (i)(3).

[(h) Nothing in this section shall affect the power of the Administrator to deal with air pollution presenting an imminent and substantial endangerment to the health of persons under section 303 of this Act.

[(i)(1) In order to reduce the likelihood of early phaseout of existing electric generating powerplants, any electric generating powerplant (A) which, because of the age and condition of the plant, is to be taken out of service permanently no later than January 1, 1980, according to the power supply plan (in existence on January 1, 1974) of the owner or operator of such plant, (B) for which a certification to that effect has been filed by the owner or operator of the plant with the Environmental Protection Agency and the Federal Power Commission, and (C) for which such Commission has determined that the certification has been made in good faith and that the plan to cease operations no later than January 1, 1980, will be carried out as planned in light of existing and prospective power supply requirements, shall be eligible for a single one-year postponement as provided in paragraph (2).

[(2) Prior to the date on which any powerplant eligible under paragraph (1) is required to comply with any requirement of an applicable implementation plan, such plant may apply (with the concurrence of the Governor of the State in which the plant is located) to the Administrator to postpone the applicability of such requirement to such plant for not more than one year. If the Administrator determines, after considering the risk to public health and welfare which may be associated with a postponement, that compliance with any such requirement is not reasonable in light of the projected useful life of the plant, the availability of rate base increases to pay for the costs of such compliance, and other appropriate factors, then the Administrator shall grant a postponement of any such requirement.

[(3) The Administrator shall, as a condition of any postponement under paragraph (2), prescribe such interim requirements as are practicable and reasonable in light of the criteria in paragraph (2).

[(j)(1) The Administrator may, after public notice and opportunity for presentation of data, views, and arguments in accordance with section 553 of title 5, United States Code, and after consultation with the Federal Energy Administrator, designate persons with respect to whom fuel exchange requirements should be imposed under paragraph (2) of this subsection. The purpose of such designation shall be to avoid or minimize the adverse impact on public health and welfare of any suspension under subsection (b) of this section or conversion to coal to which subsection (c) applies or of any allocation under section 2(d) of the Energy Supply and Environmental Coordination Act of 1974 or under the Emergency Petroleum Allocation Act of 1973.

[(2) The Federal Energy Administrator shall exercise his authority under section 2(d) of the Energy Supply and Environmental Coordination Act of 1974 and under the Emergency Petroleum Alloca-

tion Act of 1973 with respect to persons designated by the Administrator of the Environmental Protection Agency under paragraph (1) in order to require the exchange of any fuel subject to allocation under such Acts effective no later than forty-five days after the date of such designation, unless the Federal Energy Administrator determines, after consultation with the Administrator of the Environmental Protection Agency, that the costs or consumption of fuel, resulting from requiring such exchange, will be excessive.

[(k)(1) The Administrator shall study, and report to Congress not later than six months after the date of enactment of this section, with respect to—

[(A) the present and projected impact of fuel shortages and fuel allocation programs on the program under this Act;

[(B) availability of continuous emission reduction technology (including projections respecting the time, cost, and number of units available) and the effects that continuous emission reduction systems would have on the total environment and on supplies of fuel and electricity;

[(C) the number of sources and locations which must use such technology based on projected fuel availability data;

[(D) a priority schedule for installation of continuous emission reduction technology, based on public health or air quality;

[(E) evaluation of availability of technology to burn municipal solid waste in electric powerplants or other major fuel burning installations, including time schedules, priorities, analysis of pollutants which may be emitted (including those for which national ambient air quality standards have not been promulgated), and a comparison of health benefits and detriments from burning solid waste and of economic costs;

[(F) evaluation of alternative control strategies for the attainment and maintenance of national ambient air quality standards for sulfur oxides within the time for attainment prescribed in this Act, including associated considerations of cost, time for attainment, feasibility, and effectiveness of such alternative control strategies as compared to stationary source fuel and emission regulations;

[(G) proposed priorities for continuous emission reduction systems which do not produce solid waste, for sources which are least able to handle solid waste byproducts of such systems;

[(H) plans for monitoring or requiring sources to which this section applies to monitor the impact of actions under this section on concentrations of sulfur dioxide in the ambient air; and

[(I) steps taken pursuant to authority of section 110 (a)(3)(B) of this Act.

[(2) Beginning January 1, 1975, the Administrator shall publish in the Federal Register, at no less than one-hundred-and-eighty-day intervals, the following:

[(A) A concise summary of progress reports which are required to be filed by any person or source owner or operator to which subsection (c) applies. Such progress reports shall report on the status of compliance with all requirements which have been imposed by the Administrator under such subsection.

- [(B) Up-to-date findings on the impact of this section upon—  
 [(i) applicable implementation plans, and  
 [(ii) ambient air quality.]]

#### DELAYED COMPLIANCE PENALTY

*SEC. 120. (a) Prior to January 1, 1978, any enforcement order issued under subsection (d) of section 113 of this Act shall be amended to include a delayed compliance penalty established pursuant to this section which shall be imposed automatically and payable monthly for any major emitting facility which for any reason not entirely beyond the control of the owner or operator is not in compliance with an applicable emission limitation on January 1, 1979.*

*(b) As an enforceable interim step under any enforcement order issued under section 113(d) of this Act the owner or operator of any major emitting facility not in compliance with an applicable emission limitation, for which such order specifies a date for compliance after January 1, 1978, shall, prior to January 1, 1977, furnish to the State (with a copy to the Administrator) information containing a detailed description of the control technology or system proposed to achieve compliance with the applicable emission limitation and the estimated cost of compliance, including capital costs, debt service costs, the estimated schedule of expenditures to comply with such limitation or requirement by January 1, 1979, and the estimated annual costs of operation and maintenance of any technology or system required in order to maintain such compliance, together with such information as the State (or the Administrator) may require on the economic value which a delay in compliance beyond January 1, 1979, may have for the owner or operator of such facility.*

*(c)(1) A notice of receipt of information pursuant to subsection (b) of this section shall be published in the newspapers in general circulation in such State, and such notice shall set forth where copies of the information are available for inspection and, for a reasonable charge, copying.*

*(2)(A) Within sixty days following the date of publication of the notice issued under paragraph (1) of this subsection there shall be published in the newspapers in general circulation in such State (and, as appropriate, the Federal Register or any publication required as part of any rulemaking activity in such State) the proposed delayed compliance penalty applicable to the major emitting facility, with an announcement of an opportunity for a public hearing on such action.*

*(B) Such proposed delayed compliance penalty under subparagraph (A) of this paragraph, determined in accordance with guidelines published by the Administrator, shall be a monthly payment in an amount no less than the monthly equivalent of the capital costs of compliance and debt service over a normal amortization period, not to exceed ten years, operation and maintenance costs foregone as a result of noncompliance, and the economic value which a delay in compliance beyond January 1, 1979, may have for the owner or operator of such major emitting facility.*

*(C) The State shall take final action establishing such delayed compliance penalty within sixty days after the date of publication of the proposed penalty under subparagraph (A) of this paragraph.*

*(d)(1) A delayed compliance penalty established by a State under this section shall apply unless the Administrator, within ninety days*

after the date of publication of the proposed penalty under subsection (c)(2)(A) of this section, objects in writing to the amount of the penalty as less than would be required to comply with guidelines established by the Administrator.

(2) If the Administrator objects under this subsection, he shall immediately establish a substitute delayed compliance penalty applicable to such facility.

(e)(1) In the event an owner or operator contests the delayed compliance penalty established under this section, the owner or operator may within sixty days seek review of such penalty in the appropriate United States district court.

(2)(A) Except as provided in subparagraph (B) of this paragraph, in no event shall any challenge or review taken under this subsection operate to stay or otherwise delay the obligation of a facility not in compliance with an applicable emission limitation to commence monthly payment of the delayed compliance penalty as determined by the State (or the Administrator) on January 1, 1979, pending the outcome of any such review.

(B) In any challenge of the imposition of the penalty based on an allegation that the failure to comply by January 1, 1979, was due to reasons entirely beyond the control of the owner or operator, the obligation to commence monthly payment of the delayed compliance penalty may be stayed pending the outcome of such challenge: Provided, That as a condition of such stay, the owner or operator of such source shall post a bond or other surety in an amount equal to the potential liability for such penalty during the period of the stay.

(3) If an owner or operator is successful in any challenge or review proceedings under this subsection, the court may award such relief as necessary, including cancellation of the bond, rebate of any payments, or adjustment of the amount of payments required by the order.

(f) In any case where a State does not have sufficient authority to issue a delayed compliance penalty, the Administrator after thirty days notice to the State shall establish, implement, and enforce such penalty.

(g) Failure to make any payment required by an order under this section and section 113(d) of this Act or to submit information required under this section shall, in addition to liability for such payments, subject the owner or operator of a major emitting facility operating pursuant to an enforcement order issued under section 113(d) of this Act to a penalty under subsection (e) of section 113 of this Act.

(h) Any actions pursuant to this section, including any objection of the Administrator under subsection (d)(1) of this section, shall be considered a final action for purposes of section 307 of this Act.

(i) Any enforcement orders, payments, sanctions, or other requirements under this section shall be in addition to any other permits, orders, payments, sanctions, or other requirements established under this Act, and shall in no way effect any civil or criminal enforcement proceedings brought under any provision of this Act or State or local law.

(j) In the case of an emission limitation approved or promulgated by the Administrator after the enactment of the Clean Air Amendments of 1976 which is more stringent than the emission limitation for the source under the applicable implementation plan in effect prior to such approval or promulgation, if any, or where there was no emission limitation approved or promulgated before enactment of the Clean Air Amendments of 1976,

the date for imposition of the delayed compliance penalty under subsection (a) of this section, and for purposes of subsections (b), (c)(2)(B), and (e) of this section, shall be either January 1, 1979, or the date on which the source is required to be in full compliance with the emission limitation, whichever is later, but in no event later than three years after the approval or promulgation of such emission limitation.

## PART B—OZONE PROTECTION

### PURPOSES

SEC. 150. The purposes of this part are (1) to provide for a better understanding of the effects of human actions on the ozone in the stratosphere, (2) to provide for a better understanding of the effects of changes in the ozone in the stratosphere on the public health and welfare, and (3) to authorize the regulation of activities which affect the ozone in the stratosphere in such a way as to cause or contribute to endangerment of the public health or welfare.

### FINDINGS AND DEFINITIONS

SEC. 151. (a) The Congress finds, on the basis of presently available information, that—

(1) halocarbon compounds introduced into the environment potentially threaten to reduce the concentration of ozone in the stratosphere;

(2) ozone reduction will lead to increased incidence of solar ultraviolet radiation at the surface of the Earth;

(3) increased incidence of solar ultraviolet radiation is likely to cause increased rates of disease in humans (including increased rates of skin cancer), threaten food crops, and otherwise damage the natural environment; and

(4) other substances, practices, processes, and activities may affect the ozone in the stratosphere, and should be investigated to give early warning of any potential problem and to develop the basis for possible future regulatory action.

(b) For the purposes of this part—

(1) the term “halocarbon” means the chemical compounds  $\text{CFCl}_3$  and  $\text{CF}_2\text{Cl}_2$ , other chlorofluoromethanes, and such other halogenated compounds as the Administrator determines may threaten to contribute to reductions in the concentration of the ozone in the stratosphere;

(2) the term “stratosphere” means that part of the atmosphere above the tropopause; and

(3) the term “aerosol containers” means pressurized dispensing containers.

### STUDIES AND REPORTS

SEC. 152. (a) The Administrator shall undertake to contract with the National Academy of Sciences to—

“(1) continue the study begun prior to enactment of this *pari* and report to the Administrator and the Congress not later than July 1, 1976, concerning the nature and likelihood of potential direct and indirect effects on the public health and welfare from the release of halocarbons into the atmosphere; and

"(2) perform further studies and report to the Administrator and the Congress not later than October 1, 1977, on—

"(A) the nature and likelihood of potential direct and indirect effects on the ozone in the stratosphere from the release of halocarbons into the atmosphere;

"(B) the nature and likelihood of potential direct and indirect effects on the ozone in the stratosphere from other substances, practices, processes, or activities;

"(C) the nature and likelihood of potential direct and indirect effects on public health or welfare from changes in the ozone in the stratosphere; and

"(D) methods to control or replace halocarbons or other substances, practices, processes, or activities which may affect the ozone in the stratosphere.

"(b) The Secretary of Labor shall study and transmit reports to the Administrator and the Congress (1) not later than October 1, 1976, with respect to the losses and gains to industry and employment which could result from the elimination of the use of halocarbons in aerosol containers and recommended means of alleviating unemployment or other undesirable economic impact, if any, resulting therefrom; and (2) not later than October 1, 1977, with respect to the losses and gains to industry and employment which could result from the control of uses of halocarbon compounds other than in aerosol containers, and recommended means of alleviating unemployment or other undesirable economic impact, if any, resulting therefrom.

"(c)(1) The National Aeronautics and Space Administration shall—

"(A) pursuant to its authority under title IV of the National Aeronautics and Space Act of 1958, as amended by Public Law 94-39, continue programs of research, technology, and monitoring of the stratosphere for the purpose of understanding the physics and chemistry of the stratosphere and for the early detection of potentially harmful changes in the ozone in the stratosphere;

"(B) in implementing this subsection, coordinate the programs of all Federal agencies relating to the research, technology, and monitoring of the phenomena of the upper atmosphere, including the stratosphere.

"(C) transmit reports by October 1, 1976, by October 1, 1977, and from time to time thereafter, but at least once each Congress, to the Administrator and the Congress on the results of the programs authorized in this subsection, together with any appropriate recommendations for Federal action, including regulations.

"(2) Nothing in title IV of the National Aeronautics and Space Act of 1958, as amended, or this Act shall prevent the National Aeronautics and Space Administration from delegating operational monitoring of the stratosphere to another appropriate Federal agency.

"(d) The Administrator of the National Oceanic and Atmospheric Administration shall continue programs of research and monitoring of the atmosphere for the purpose of early detection of potentially harmful changes in the ozone in the stratosphere and the climatic effects of reduction of ozone in the stratosphere and transmit reports by October 1, 1976, by October 1, 1977, and from time to time thereafter, but at least once each Congress, to the Administrator, the National Aeronautics and Space Administration and the Congress on the results of such programs, together

with any appropriate recommendations for Federal action, including regulations.

“(e) The Director of the National Science Foundation shall encourage and support ongoing stratospheric research programs and continuing research programs that will increase scientific knowledge of the effects of changes in the ozone layer in the stratosphere upon living organisms and ecosystems; and transmit reports by October 1, 1976, by October 1, 1977, and from time to time thereafter but at least once each Congress, to the Administrator, the National Aeronautics and Space Administration and the Congress on the results of such programs, together with any appropriate recommendations for Federal action, including regulations.

“(f) The Secretary of Agriculture shall encourage and support continuing research programs that will increase scientific knowledge of the effects of changes in the ozone in the stratosphere upon animals, crops, and other plant life; and shall transmit reports by October 1, 1976, by October 1, 1977, and from time to time thereafter but at least once each Congress, to the Administrator and the Congress on the results of such programs together with any appropriate recommendations for Federal action, including regulations.

“(g) The Secretary of Health, Education, and Welfare shall—

“(1) encourage and support continuing research programs that will increase scientific knowledge of the effects of changes in the ozone in the stratosphere upon human health; and shall transmit reports by October 1, 1976, by October 1, 1977, and from time to time thereafter, but at least once each Congress, to the Administrator and the Congress, on the results of such programs, together with any appropriate recommendations for Federal action, including regulations.

“(2) In carrying out the programs authorized by this subsection, utilize the National Institute of Environmental Health Sciences to coordinate the programs of all Federal agencies relating to research into the effects upon human health of changes in the ozone layer in the stratosphere.

“(h) The Food and Drug Administration, in cooperation with the Consumer Product Safety Commission, shall consider proposed substitutes for halocarbons in aerosol containers and other uses and shall propose regulations to assure that such substitutes do not adversely affect human health, directly or indirectly;

“(i) The Administrator shall—

“(1) encourage and support continuing research programs that will increase scientific knowledge of the effects on public health and welfare of changes in the ozone layer in the stratosphere. Such research shall be coordinated with other Federal agencies identified in this section. He shall report to the Congress on the findings of such research by October 1, 1976, by October 1, 1977, and from time to time thereafter, but at least once each Congress.

“(2) Not later than two years after the date of the enactment of the Clean Air Amendments of 1976, submit to the Congress a summary report of the results of the studies and research conducted under this section by the Environmental Protection Agency and other Federal agencies. The Administrator shall include in the report a summary of his actions regulating sources of halocarbons and his recommendations for control of substances, practices, processes, and activities other than those involving halocarbons, which are found to affect the ozone

in the stratosphere and which may cause or contribute to harmful effects on public health or welfare.

“(j) in carrying out the programs provided for in subsections (b) through (i) of this section, the agencies responsible shall enlist and encourage assistance from the Nation’s institutions of higher education and private organizations, including industrial, labor, consumer, environmental and other organizations, coordinate such activity with the other appropriate agencies, and solicit and consider the views of the Administrator with regard to plans for the research technology and monitoring involved so that such research technology and monitoring will help provide the information base for the Administrator to decide whether regulatory action is necessary and to take such action if it is necessary.

“(k) The Administrator shall convene a Management Council to facilitate coordination of the programs authorized under this Part, which Council shall (A) be comprised of the officials responsible for the research efforts of the agencies required to perform research under this Part, and of such other agencies as the Administrator may designate; (B) review plans and funding for pertinent research and studies in order to provide the information base for the Administrator to decide what regulatory action, if any, is necessary, and (C) coordinate the preparation of reports authorized or required under this part to minimize duplication and ensure that the necessary reports are made available in a timely fashion.

#### REGULATION

SEC. 153. (a) Not later than January 1, 1978, the Administrator, after considering available reports under section 152, and other available information, and after consulting appropriate agencies and scientific entities, if he then finds that halocarbon emissions from aerosol containers may reasonably be anticipated to cause or contribute to the endangerment of public health or welfare, shall publish proposed regulations which prohibit or restrict the manufacture, sale, import, export, or use of aerosol containers which result in discharge of halocarbons into the atmosphere to the extent necessary to avoid any such endangerment of public health or welfare. Not later than April 1, 1978, and after public hearings, the Administrator shall promulgate and transmit to the Congress final regulations, which shall take effect if not disapproved pursuant to subsection (b) of this section.

(b) Regulations promulgated under subsection (a) of this section and any amendment or revision thereof shall be transmitted to the Congress. A regulation transmitted under this subsection shall take effect at the end of the first period of ninety calendar days of continuous session of Congress after the date on which the regulation is transmitted to it unless, between the date of transmittal and the end of the ninety-day period, either House passes a resolution disapproving such regulation.

(c) From time to time after April 1, 1978, the Administrator may revise, promulgate, and submit to the Congress, in accordance with subsection (b) of this section any of the regulations promulgated pursuant to this section in the light of new evidence.

#### EXPEDITED REGULATION

SEC. 154. (a) If the Administrator at any time prior to January 1, 1978, finds it necessary to protect the public health or welfare from significant

risk of harmful effects which may reasonably be anticipated to arise in whole or in part from halocarbon emissions from aerosol containers, he shall promptly, after public hearings, promulgate regulations which prohibit or restrict the manufacture, production, sale, import, export, or use of aerosol containers discharging halocarbons into the atmosphere. In promulgating such regulations the Administrator shall take into account the public need for such aerosol containers, the costs and feasibility of such action, and all other costs related to depletion of stratospheric ozone.

(b) To the extent determined essential to protect the public health and welfare pursuant to this section, the Administrator may in the promulgation of regulations pursuant to subsection (a) proceed without regard to such provisions of title 5 of the United States Code, relating to administrative procedure, as he determines necessary.

(c) From time to time the Administrator may revise any of the regulations issued pursuant to this section in the light of new evidence.

#### ADDITIONAL REGULATION

##### SEC. 155. The Administrator shall—

(a) consult with appropriate Federal agencies and scientific entities;

(b) afford an opportunity for public hearing; and

(c) if he then finds that halocarbons released from sources other than aerosol containers may reasonably be anticipated to cause or contribute to the endangerment of the public health or welfare, publish not later than April 1, 1978, proposed regulations for the control of these emissions. Such regulations shall restrict the manufacture, sale, import, export, or use of such sources to the extent necessary to avoid such endangerment of public health or welfare, and shall include limitations on emissions from such sources to the maximum extent feasible, taking into account the cost of achieving such limitations and all other costs related to the depletion of stratospheric ozone. The Administrator shall take into consideration the findings of other Federal agencies conducting research on stratospheric ozone pertaining to the public health and welfare, and available reports prepared pursuant to section 152. Regulations proposed under this section shall be promulgated in final form within ninety days. From time to time the Administrator may revise any of the regulations issued under this section in the light of new evidence.

#### PENALTIES

SEC. 156. (a) It shall be unlawful for any person to violate any provision of regulations pursuant to section 153, 154, or 155 of this Act.

(b) (1) The Administrator shall commence a civil action in the United States district court in the judicial district in which the person alleged to be engaged in conduct prohibited by regulations under section 153, 154, or 155 of this Act, is located or conducts business, for appropriate relief, including a temporary restraining order or a preliminary or permanent injunction, to restrain any such conduct.

(2) Any person engaged in conduct prohibited by regulations under section 153, 154, or 155 of this Act other than use of aerosol containers by an ultimate consumer, shall be subject to a civil penalty of not more than \$10,000 per day of violation.

## INTERNATIONAL COOPERATION

*SEC. 157. The President shall undertake to enter into international agreements to foster cooperative research which complements studies and research authorized by this part, and to develop standards and regulations which protect the stratosphere consistent with regulations under sections 153, 154, and 155 of this Act. For these purposes the President through the Secretary of State and the Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs, shall negotiate multilateral treaties, conventions, resolutions, or other agreements, and formulate, present, or support proposals at the United Nations and other appropriate international forums and shall report to the Congress periodically on efforts to arrive at such agreements. Research agreements shall be developed in accordance with section 8 of Public Law 94-39, and other existing legislation.*

## STATE AUTHORITY

*SEC. 158. Nothing in this part shall preclude or deny the right of any State or political subdivision thereof to adopt or enforce any regulation controlling the manufacture, sale, or use of halocarbons except that if any regulation is in effect under this part such State or political subdivision may not adopt or enforce any regulation which is less stringent than the regulation under this part.*

## AUTHORIZATION OF APPROPRIATIONS

*SEC. 159. For the purpose of carrying out the provisions of this part, there are authorized to be appropriated—*

- (i) to the National Aeronautics and Space Administration, the National Science Foundation, and the Department of State, such sums as may be necessary for the fiscal year ending June 30, 1976, the transition quarter ending September 30, 1976, and the fiscal year ending September 30, 1977; and*
- (ii) to all other agencies such sums as are necessary.*

## TITLE II—EMISSION STANDARDS FOR MOVING SOURCES

## SHORT TITLE

*SEC. 201. This title may be cited as the "National Emission Standards Act."*

## PART A—MOTOR VEHICLE EMISSION AND FUEL STANDARDS

## ESTABLISHMENT OF STANDARDS

*SEC. 202. (a) Except as otherwise provided in subsection (b)—*

- (1) The Administrator shall by regulation prescribe (and from time to time revise) in accordance with the provisions of this section, standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment causes or contributes to, or is likely to cause or to contribute to, air pollution which endangers the public health or welfare. Such standards shall be applicable to such vehicles and engines for their useful life (as determined under subsection (d)), whether such vehicles*

and engines are designed as complete systems or incorporate devices to prevent or control such pollution.

(2) Any regulation prescribed under this subsection (and any revision thereof) shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period.

(3) *The regulations under paragraph (1) of this subsection applicable to emissions of carbon monoxide, hydrocarbons, particulates, and oxides of nitrogen from heavy duty trucks, buses, and motorcycles and engines thereof manufactured in model years (A) 1979 and 1980 (and, if appropriate in the judgment of the Administrator, 1978) shall contain standards which require a reduction of emissions of such pollutants established by the application of the best available control technology, taking into account the cost of compliance, as determined by the Administrator, and (B) 1981 and thereafter shall contain standards requiring a reduction of emissions of such pollutants equivalent to the levels required by the standards established under subsection (b) of this section, except that for heavy duty motor vehicles over 10,000 pounds and engines thereof such standards shall constitute a reduction from uncontrolled levels of emissions of carbon monoxide, hydrocarbons, and oxides of nitrogen as actually measured from gasoline powered heavy duty motor vehicles over 10,000 pounds and engines thereof equivalent to the percentage reduction required for light duty motor vehicles in model year 1980 compared to the appropriate model year 1970 base or, for oxides of nitrogen, model year 1971 base (unless the Administrator finds and reports to the Congress that the control technology is not available or has not been available for a sufficient period of time to achieve compliance on any class of heavy duty vehicle or engine thereof and establishes standards which are based on the best available control technology and which constitute a reduction from any standards which apply in model years 1978 through 1980). The Administrator may, where appropriate, divide vehicles and engines thereof regulated under this paragraph into classes by size, weight, horsepower, and use patterns.*

(b)(1)(A) The regulations under subsection (a) applicable to emissions of carbon monoxide and hydrocarbons from light-duty vehicles and engines manufactured during model years 1975 [and 1976] 1976, 1977, and 1978 shall contain standards which are identical to the interim standards which were prescribed (as of December 1, 1973) under paragraph (5)(A) of this subsection for light-duty vehicles and engines manufactured during model year 1975. The regulations under subsection (a) applicable to emissions of carbon monoxide and hydrocarbons from light duty vehicles and engines manufactured during or after model year [1977] 1979 shall contain standards which require a reduction of at least 90 per centum from emissions of carbon monoxide and hydrocarbons allowable under the standards under this section applicable to light duty vehicles and engines manufactured in model year 1970.

[(B) The regulations under subsection (a) applicable to emissions of oxides of nitrogen from light-duty vehicles and engines manufactured during model years 1975 and 1976 shall contain standards which are

identical to the standards which were prescribed (as of December 1, 1973) under subsection (a) for light-duty vehicles and engines manufactured during model year 1975. The regulations under subsection (a) applicable to emissions of oxides of nitrogen from light-duty vehicles and engines manufactured during model year 1977 shall contain standards which provide that such emissions from such vehicles and engines may not exceed 2.0 grams per vehicle mile. The regulations under subsection (a) applicable to emissions of oxides of nitrogen from light duty vehicles and engines manufactured during or after model year 1978 shall contain standards which require a reduction of at least 90 per centum from the average of emissions of oxides of nitrogen actually measured from light duty vehicles manufactured during model year 1971 which are not subject to any Federal or State emission standard for oxides of nitrogen. Such average of emissions shall be determined by the Administrator on the basis of measurements made by him.】

*(B) The regulations under subsection (a) applicable to emissions of oxides of nitrogen from light duty vehicles and engines manufactured during (i) model year 1976 shall contain standards which provide that such emissions from such vehicles and engines may not exceed 3.1 grams per vehicle mile, (ii) (subject to the provisions of paragraph (5) of this subsection) model years 1977, 1978, and 1979 shall contain standards which provide that such emissions from such vehicles and engines may not exceed 2.0 grams per vehicle mile, and (iii) model year 1980 and thereafter shall contain standards which provide that such emissions from such vehicle and engines may not exceed 1.0 gram per vehicle mile.*

(2) Emission standards under paragraph (1), and measurement techniques on which such standards are based (if not promulgated prior to the date of enactment of the Clean Air Act Amendments of 1970), shall be prescribed by regulation within 180 days after such date.

(3) For purposes of this part—

(A)(i) The term “model year” with reference to any specific calendar year means the manufacturer’s annual production period (as determined by the Administrator) which includes January 1 of such calendar year. If the manufacturer has no annual production period, the term “model year” shall mean the calendar year.

(ii) For the purpose of assuring that vehicles and engines manufactured before the beginning of a model year were not manufactured for purposes of circumventing the effective date of a standard required to be prescribed by subsection (b), the Administrator may prescribe regulations defining “model year” otherwise than as provided in clause (i).

(B) The term “light duty vehicles and engines” means new light duty motor vehicles and new light duty motor vehicle engines, as determined under regulations of the Administrator.

(4) On July 1 of 1971, and of each year thereafter, the Administrator shall report to the Congress with respect to the development of systems necessary to implement the emission standards established pursuant to this section. Such reports shall include information regarding the continuing effects of such air pollutants subject to standards under this section on the public health and welfare, the extent and progress of efforts being made to develop the necessary systems,

the costs associated with development and application of such systems, and following such hearings as he may deem advisable, any recommendations for additional congressional action necessary to achieve the purposes of this Act. In gathering information for the purposes of this paragraph and in connection with any hearing, the provisions of section 307(a) (relating to subpoenas) shall apply.

[(5)(A) At any time after January 1, 1975, any manufacturer may file with the Administrator an application requesting the suspension for one year only of the effective date of any emission standard required by paragraph (1)(A) with respect to such manufacturer for light-duty vehicles and engines manufactured in model year 1977. The Administrator shall make his determination with respect to any such application within sixty days. If he determines, in accordance with the provisions of this subsection, that such suspension should be granted, he shall simultaneously with such determination prescribe by regulation interim emission standards which shall apply (in lieu of the standards required to be prescribed by paragraph (1)(A) of this subsection) to emissions of carbon monoxide or hydrocarbons (or both) from such vehicles and engines manufactured during model year 1977.

[(B) Any interim standards prescribed under this paragraph shall reflect the greatest degree of emission control which is achievable by application of technology which the Administrator determines is available, giving appropriate consideration to the cost of applying such technology within the period of time available to manufacturers.

[(C) Within 60 days after receipt of the application for any such suspension, and after public hearing, the Administrator shall issue a decision granting or refusing such suspension. The Administrator shall grant such suspension only if he determines that (i) such suspension is essential to the public interest or the public health and welfare of the United States; (ii) all good faith efforts have been made to meet the standards established by this subsection; (iii) the applicant has established that effective control technology, processes, operating methods, or other alternatives are not available or have not been available for a sufficient period of time to achieve compliance prior to the effective date of such standards, and (iv) the study and investigation of the National Academy of Sciences conducted pursuant to subsection (c) and other information available to him has not indicated that technology, processes, or other alternatives are available to meet such standards.

[(D) Nothing in this paragraph shall extend the effective date of any emission standard required to be prescribed under this subsection for more than one year.]

*(5) The Administrator shall promulgate regulations requiring each manufacturer whose sales represent more than 3 per centum of total light duty motor vehicle unit sales in the world to comply during model year 1979 with the emission standards required under paragraph (1) of this subsection for model year 1980 or 10 per centum of the manufacturer's projected total sales in that year 1979, as determined by the Administrator. Such regulations shall provide that no more than 90 per centum of such manufacturer's projected total sales of light duty motor vehicles in model year 1979 may be sold in compliance with the emission standards otherwise required under paragraph (1) of this subsection for model year 1979.*

(6) *The Congress hereby declares and establishes as a research objective, the development of propulsion systems and emission control technology to achieve standards which represent a reduction of at least 90 per centum from the average emissions of oxides of nitrogen actually measured from light duty motor vehicles manufactured in model year 1971 not subject to any Federal or State emission standard for oxides of nitrogen. The Administrator shall, by regulations promulgated within one hundred and eighty days after enactment of the Clean Air Amendments of 1976, require each manufacturer whose sales represent at least 0.5 per centum of light duty motor vehicle sales in the United States, to build and, on a regular basis, demonstrate the operation of light duty motor vehicles that meet this research objective, in addition to any other applicable standards or requirements for other pollutants under this Act. Such demonstration vehicles shall be submitted to the Administrator no later than model year 1978 and in each model year thereafter. Such demonstration shall, in accordance with applicable regulations, to the greatest extent possible, (A) be designed to encourage the development of new powerplant and emission control technologies that are fuel efficient, (B) assure that the demonstration vehicles are or could reasonably be expected to be within the productive capability of the manufacturers, and (C) assure the utilization of optimum engine, fuel, and emission control systems.*

【(c)(1) The Administrator shall undertake to enter into appropriate arrangements with the National Academy of Sciences to conduct a comprehensive study and investigation of the technological feasibility of meeting the emissions standards required to be prescribed by the Administrator by subsection (b) of this section.】

(c)(1) *The Administrator shall undertake to enter into appropriate arrangements with the National Academy of Sciences to conduct continuing comprehensive studies and investigations of the effects on public health and welfare of emissions subject to subsection (a) of this section (including sulfur compounds) and the technological feasibility of meeting emission standards required to be prescribed by the Administrator by subsection (b) of this section. The Administrator shall report to the Congress within six months of the date of enactment of this paragraph and each year thereafter regarding the status of the contractual arrangements and conditions necessary to implement this paragraph.*

(2) Of the funds authorized to be appropriated to the Administrator by this Act, such amounts as are required shall be available to carry out the study and investigation authorized by paragraph (1) of this subsection.

(3) In entering into any arrangement with the National Academy of Sciences for conducting the study and investigation authorized by paragraph (1) of this subsection, the Administrator shall request the National Academy of Sciences to submit semiannual reports on the progress of its study and investigation to the Administrator and the Congress, beginning not later than July 1, 1971, and continuing until such study and investigation is completed.

(4) The Administrator shall furnish to such Academy at its request any information which the Academy deems necessary for the purpose of conducting the investigation and study authorized by paragraph (1) of this subsection. For the purpose of furnishing such information, the Administrator may use any authority he has under this Act (A) to obtain information from any person, and (B) to

require such person to conduct such tests, keep such records, and make such reports respecting research or other activities conducted by such person as may be reasonably necessary to carry out this subsection.

(d) The Administrator shall prescribe regulations under which the useful life of vehicles and engines shall be determined for purposes of subsection (a)(1) of this section and section 207. Such regulations shall provide that useful life shall—

(1) in the case of light duty vehicles and light duty vehicle engines, be a period of use of five years or of fifty thousand miles (or the equivalent), whichever first occurs; and

[(2) in the case of any other motor vehicle or motor vehicle engine, be a period of use set forth in paragraph (1) unless the Administrator determines that a period of use of greater duration or mileage is appropriate.]

*(2) in the case of any motorcycle or any other motor vehicle or motor vehicle engine not included in paragraph (1), be a period of use the Administrator shall determine.*

(e) In the event a new power source or propulsion system for new motor vehicles or new motor vehicle engines is submitted for certification pursuant to section 206(a), the Administrator may postpone certification until he has prescribed standards for any air pollutants emitted by such vehicle or engine which cause or contribute to, or are likely to cause or contribute to, air pollution which endangers the public health or welfare but for which standards have not been prescribed under subsection (a).

#### PROHIBITED ACTS

SEC 203. (a) The following acts and the causing thereof are prohibited—

(1) in the case of a manufacturer of new motor vehicles or new motor vehicle engines for distribution in commerce, the sale, or the offering for sale, or the introduction, or delivery for introduction, into commerce, or (in the case of any person, except as provided by regulation of the Administrator) the importation into the United States of any new motor vehicle or new motor vehicle engine, manufactured after the effective date of regulations under this part which are applicable to such vehicle or engine unless such vehicle or engine is covered by a certificate of conformity issued (and in effect) under regulations prescribed under this part (except as provided in subsection (b));

(2) for any person to fail or refuse to permit access to or copying of records or to fail to make reports or provide information, required under section 208;

(3) (4) for any person to remove or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine in compliance with regulations under this title prior to its sale and delivery to the ultimate purchaser, or for any manufacturer or dealer knowingly to remove or render inoperative any such device or element of design after such sale and delivery to the ultimate purchaser; or

(B) *for any person engaged in the business of repairing, servicing, selling, leasing, or trading motor vehicles or motor vehicle engines, or who operates a fleet of motor vehicles, knowingly to remove or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine in compliance with regulations under this title following its sale and delivery to the ultimate purchaser, or*

(4) for any manufacturer of a new motor vehicle or new motor vehicle engine subject to standards prescribed under section 202—

(A) to sell or lease any such vehicle or engine unless such manufacturer has complied with the requirements of section 207 (a) and (b) with respect to such vehicle or engine, and unless a label or tag is affixed to such vehicle or engine in accordance with section 207(c)(3), [or]

(B) to fail or refuse to comply with the requirements of section 207(c) or (e) [.] or

(C) *except as provided in subsection (c)(3) of section 207, to provide directly or indirectly in any communication to the ultimate purchaser or any subsequent purchaser that the coverage of any warranty under this Act is conditioned upon use of any part, component, or system manufactured by such manufacturer or any person acting for such manufacturer or under his control, or conditioned upon service performed by any such person.*

(b)(1) The Administrator may exempt any new motor vehicle or new motor vehicle engine from subsection (a), upon such terms and conditions as he may find necessary for the purpose of research, investigations, studies, demonstrations, or training, or for reasons of national security.

(2) A new motor vehicle or new motor vehicle engine offered for importation or imported by any person in violation of subsection (a) shall be refused admission into the United States, but the Secretary of the Treasury and the Administrator may, by joint regulation, provide for deferring final determination as to admission and authorizing the delivery of such a motor vehicle or engine offered for import to the owner or consignee thereof upon such terms and conditions (including the furnishing of a bond) as may appear to them appropriate to insure that any such motor vehicle or engine will be brought into conformity with the standards, requirements, and limitations applicable to it under this part. The Secretary of the Treasury shall, if a motor vehicle or engine is finally refused admission under this paragraph, cause disposition thereof in accordance with the customs laws unless it is exported, under regulations prescribed by such Secretary, within ninety days of the date of notice of such refusal or such additional time as may be permitted pursuant to such regulations, except that disposition in accordance with the customs laws may not be made in such manner as may result, directly or indirectly, in the sale, to the ultimate consumer, of a new motor vehicle or new motor vehicle engine that fails to comply with applicable standards of the Administrator under this part.

(3) A new motor vehicle or new motor vehicle engine intended solely for export, and so labeled or tagged on the outside of the container and on the vehicle or engine itself, shall be subject to

the provisions of subsection (a), except that if the country of export has emission standards which differ from the standards prescribed under subsection (a), then such vehicle or engine shall comply with the standards of such country of export.

(c) Upon application therefore, the Administrator may exempt from section 203(a)(3) any vehicles (or class thereof) manufactured before the 1974 model year from section 203(a)(3) for the purpose of permitting modifications to the emission control device or system of such vehicle in order to use fuels other than those specified in certification testing under section 206(a)(1), if the Administrator, on the basis of information submitted by the applicant, finds that such modification will not result in such vehicle or engine not complying with standards under section 202 applicable to such vehicle or engine. Any such exemption shall identify (1) the vehicle or vehicles so exempted, (2) the specific nature of the modification, and (3) the person or class of persons to whom the exemption shall apply.

#### INJUNCTION PROCEEDINGS

SEC. 204. (a) The district courts of the United States shall have jurisdiction to restrain violations of paragraphs (1), (2), (3), or (4) of section 203(a).

(b) Actions to restrain such violations shall be brought by and in the name of the United States. In any such action, subpoenas for witnesses who are required to attend a district court in any district may run into any other district.

#### PENALTIES

[SEC. 205. Any person who violates paragraph (1), (2), (3), or (4) of section 203(a) shall be subject to a civil penalty of not more than \$10,000. Any such violation with respect to paragraph (1), (2), or (4) of section 203(a) shall constitute a separate offense with respect to each motor vehicle or motor vehicle engine.]

SEC. 205. *Any person who violates paragraph (1), (2), or (4) of section 203(a) or any manufacturer who violates paragraph (3) of section 203(a) shall be subject to a civil penalty of not more than \$10,000. Any person who violates paragraph (3) of section 203(a) shall be subject to a civil penalty of not more than \$2,500. Any such violation with respect to paragraph (1), (2), (3), or (4) of section 203(a) shall constitute a separate offense with respect to each motor vehicle or motor vehicle engine.*

#### MOTOR VEHICLE AND MOTOR VEHICLE ENGINE COMPLIANCE TESTING AND CERTIFICATION

SEC. 206. (a)(1)(A) The Administrator shall test, or require to be tested in such manner as he deems appropriate, any new motor vehicle or new motor vehicle engine submitted by a manufacturer to determine whether such vehicle or engine conforms with the regulations prescribed under section 202 of this Act. If such vehicle or engine conforms to such regulations, the Administrator shall issue a certificate of conformity upon such terms, and for such period (not in excess of one year), as he may prescribe.

(2) The Administrator shall test any emission control system incorporated in a motor vehicle or motor vehicle engine submitted to him by any person, in order to determine whether such system enables such vehicle or engine to conform to the standards required to be prescribed under section 202(b) of this Act. If the Administrator finds on the basis of such tests that such vehicle or engine conforms to such standards, the Administrator shall issue a verification of compliance with emission standards for such system when incorporated in vehicles of a class of which the tested vehicle is representative. He shall inform manufacturers and the National Academy of Sciences, and make available to the public, the results of such tests. Tests under this paragraph shall be conducted under such terms and conditions (including requirements for preliminary testing by qualified independent laboratories) as the Administrator may prescribe by regulations.

*(B) In the case of heavy-duty motor vehicles, the Administrator may perform, or require to be performed, the tests provided under subparagraph (A) of this paragraph on heavy-duty motor vehicle engines for application in a range of vehicle configuration and use patterns.*

(b)(1)(A) In order to determine whether new motor vehicles or new motor vehicle engines being manufactured by a manufacturer do in fact conform with the regulations with respect to which the certificate of conformity was issued, the Administrator is authorized to test such vehicles or engines. Such tests may be conducted by the Administrator directly or, in accordance with conditions specified by the Administrator, by the manufacturer.

*(B) The Administrator shall within six months of the date of enactment of this subparagraph establish a test procedure to implement, beginning no later than model year 1977, the authority of subparagraph (A) of this paragraph.*

(2)(A)(i) If, based on tests conducted under paragraph (1) on a sample of new vehicles or engines covered by a certificate of conformity, the Administrator determines that all or part of the vehicles or engines so covered do not conform with the regulations with respect to which the certificate of conformity was issued, he may suspend or revoke such certificate in whole or in part, and shall so notify the manufacturer. Such suspension or revocation shall apply in the case of any new motor vehicles or new motor vehicle engines manufactured after the date of such notification (or manufactured before such date if still in the hands of the manufacturer), and shall apply until such time as the Administrator finds that vehicles and engines manufactured by the manufacturer do conform to such regulations. If, during any period of suspension or revocation, the Administrator finds that a vehicle or engine actually conforms to such regulations, he shall issue a certificate of conformity applicable to such vehicle or engine.

(ii) If, based on tests conducted under paragraph (1) on any new vehicle or engine, the Administrator determines that such vehicle or engine does not conform with such regulations, he may suspend or revoke such certificate insofar as it applies to such vehicle or engine until such time as he finds such vehicle or engine actually so conforms with such regulations, and he shall so notify the manufacturer.

(B)(i) At the request of any manufacturer the Administrator shall grant such manufacturer a hearing as to whether the tests

have been properly conducted or any sampling methods have been properly applied, and make a determination on the record with respect to any suspension or revocation under subparagraph (A); but suspension or revocation under subparagraph (A) shall not be stayed by reason of such hearing.

(ii) In any case of actual controversy as to the validity of any determination under clause (i), the manufacturer may at any time prior to the 60th day after such determination is made, file a petition with the United States court of appeals for the circuit wherein such manufacturer resides or has his principal place of business for a judicial review of such determination. A copy of the petition shall be forthwith transmitted by the clerk of the court to the Administrator or other officer designated by him for that purpose. The Administrator thereupon shall file in the court, the record of the proceedings on which the Administrator based his determination, as provided in section 2112 of title 28 of the United States Code.

(iii) If the petitioner applies to the court for leave to adduce additional evidence, and shows to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for the failure to adduce such evidence in the proceeding before the Administrator, the court may order such additional evidence (and evidence in rebuttal thereof) to be taken before the Administrator, in such manner and upon such terms and conditions as the court may deem proper. The Administrator may modify his findings as to the facts, or make new findings, by reason of the additional evidence so taken and he shall file such modified or new findings, and his recommendation, if any, for the modification or setting aside of his original determination, with the return of such additional evidence.

(iv) Upon the filing of the petition referred to in clause (ii), the court shall have jurisdiction to review the order in accordance with chapter 7 of title 5, United States Code, and to grant appropriate relief as provided in such chapter.

(c) For purposes of enforcement of this section, officers or employees duly designated by the Administrator, upon presenting appropriate credentials to the manufacturer or person in charge, are authorized (1) to enter, at reasonable times, any plant or other establishment of such manufacturers, for the purpose of conducting tests of vehicles or engines in the hands of the manufacturer, or (2) to inspect at reasonable times, records, files, papers, processes, controls, and facilities used by such manufacturer in conducting tests under the regulations of the Administrator. Each such inspection shall be commenced and completed with reasonable promptness.

(d) The Administrator shall by regulation establish methods and procedures for making tests under this section.

(e) The Administrator shall announce in the Federal Register and make available to the public the results of his tests of any motor vehicle or motor vehicle engine submitted by a manufacturer under subsection (a) as promptly as possible after the enactment of the Clean Air Amendments of 1970 and at the beginning of each model year which begins thereafter. Such results shall be described in such non-technical manner as will reasonably disclose to prospective ultimate purchasers of new motor vehicles and new motor vehicle engines

the comparative performance of the vehicles and engines tested in meeting the standards prescribed under section 202 of this Act.

#### COMPLIANCE BY VEHICLES AND ENGINES IN ACTUAL USE

SEC. 207. (a) (1) Effective with respect to vehicles and engines manufactured in model years beginning more than 60 days after the date of the enactment of the Clean Air Act Amendments of 1970, the manufacturer of each new motor vehicle and new motor vehicle engine shall warrant to the ultimate purchaser and each subsequent purchaser that such vehicle or engine is (1) designed, built, and equipped so as to conform at the time of sale with applicable regulations under section 202, and (2) free from defects in materials and workmanship which cause such vehicle or engine to fail to conform with applicable regulations for its useful life (as determined under sec 202(d)). *The cost of any light duty motor vehicle part, device, or component principally for emission control which in the instructions issued pursuant to subsection (c) (3) of this section is scheduled for replacement during the useful life of the vehicle in order to maintain compliance with regulations under section 202 of this Act and which has an expected retail price, including installation costs, greater than \$75, shall be included in the initial purchase price of the vehicle and shall be provided without cost to the ultimate purchaser or any subsequent purchaser at the time of such replacement.*

(2) *In the case of a motor vehicle part or motor vehicle engine part, the manufacturer of such part may certify that use of such part will not result in a failure of the vehicle or engine to comply with emission standards promulgated under section 202 of this Act. Such certification shall be made only under such regulations as may be promulgated by the Administrator to carry out the purposes of subsection (b). The Administrator shall promulgate such regulations no later than one year after the date of the enactment of this paragraph. Before the effective date of such regulations all parts shall be deemed to have such certification.*

(b) If the Administrator determines that (i) there are available testing methods and procedures to ascertain whether, when in actual use throughout its useful life (as determined under section 202(d)), each vehicle and engine to which regulations under section 202 apply complies with the emission standards of such regulations, (ii) such methods and procedures are in accordance with good engineering practices, and (iii) such methods and procedures are reasonably capable of being correlated with tests conducted under section 206(a)(1), then—

(1) he shall establish such methods and procedures by regulation, and

(2) at such time as he determines that inspection facilities or equipment are available for purposes of carrying out testing methods and procedures established under paragraph (1), he shall prescribe regulations which shall require manufacturers to warrant the emission control device or system of each new motor vehicle or new motor vehicle engine to which a regulation under section 202 applies and which is manufactured in a model year beginning after the Administrator first prescribes warranty regulations under this paragraph (2). The warranty under such

regulations shall run to the ultimate purchaser and each subsequent purchaser and shall provide that if—

(A) the vehicle or engine is maintained and operated in accordance with instructions under subsection (c)(3),

(B) it fails to conform at any time during its useful life (as determined under section 202(d)) to the regulations prescribed under section 202, and

(C) such nonconformity results in the ultimate purchaser (or any subsequent purchaser) of such vehicle or engine having to bear any penalty or other sanction (including the denial of the right to use such vehicle or engine) under State or Federal law,

then such manufacturer shall remedy such nonconformity under such warranty with the cost thereof to be borne by the manufacturer. *No such warranty shall be invalid on the basis of any part used in the maintenance or repair of a vehicle or engine if such part was certified as provided under subsection (a)(2) of this section.*

(c) Effective with respect to vehicles and engines manufactured during model years beginning more than 60 days after the date of enactment of the Clean Air Amendments of 1970—

(1) If the Administrator determines that a substantial number of any class or category of vehicles or engines, although properly maintained and used, do not conform to the regulations prescribed under section 202, when in actual use throughout their useful life (as determined under section 202(d)), he shall immediately notify the manufacturer thereof of such nonconformity, and he shall require the manufacturer to submit a plan for remedying the nonconformity of the vehicles or engines with respect to which such notification is given. The plan shall provide that the nonconformity of any such vehicles or engines which are properly used and maintained will be remedied at the expense of the manufacturer. If the manufacturer disagrees with such determination of nonconformity and so advises the Administrator, the Administrator shall afford the manufacturer and other interested persons an opportunity to present their views and evidence in support thereof at a public hearing. Unless, as a result of such hearing the Administrator withdraws such determination of nonconformity, he shall, within 60 days after the completion of such hearing, order the manufacturer to provide prompt notification of such nonconformity in accordance with paragraph (2).

(2) Any notification required by paragraph (1) with respect to any class or category of vehicles or engines shall be given to dealers, ultimate purchasers, and subsequent purchasers (if known) in such manner and containing such information as the Administrator may by regulations require.

[(3) The manufacturer shall furnish with each new motor vehicle or motor vehicle engine such written instructions for the maintenance and use of the vehicle or engine by the ultimate purchaser as may be reasonable and necessary to assure the proper functioning of emission control devices and systems. In addition, the manufacturer shall indicate by means of a label or tag permanently affixed to such vehicle or engine that such vehicle or

engine is covered by a certificate of conformity issued for the purpose of assuring achievement of emissions standards prescribed under section 202. Such label or tag shall contain such other information relating to control of motor vehicle emissions as the Administrator shall prescribe by regulation.】

(3)(A) *The manufacturer shall furnish with each new motor vehicle or motor vehicle engine written instructions for the proper maintenance and use of the vehicle or engine by the ultimate purchaser and such instructions shall correspond to regulations which the Administrator shall promulgate.*

(B) *The instruction under subparagraph (A) of this paragraph shall not include any condition on the ultimate purchaser's using, in connection with such vehicle or engine, any component or service (other than a component or service provided without charge under the terms of the purchase agreement) which is identified by brand, trade, or corporate name; or directly or indirectly distinguishing between service performed by the franchised dealers of such manufacturer or any other service establishments with which such manufacturer has a commercial relationship, and service performed by independent automotive repair facilities with which such manufacturer has no commercial relationship; except that the prohibition of this subsection may be waived by the Administrator if—*

*(i) the manufacturer satisfies the Administrator that the vehicle or engine will function properly only if the component or service so identified is used in connection with such vehicle or engine, and*

*(ii) the Administrator finds that such a waiver is in the public interest.*

(C) *In addition, the manufacturer shall indicate by means of a label or tag permanently affixed to such vehicle or engine that such vehicle or engine is covered by a certificate of conformity issued for the purpose of assuring achievement of emissions standards prescribed under section 202 of this Act. Such label or tag shall contain such other information relating to control of motor vehicle emissions as the Administrator shall prescribe by regulation.*

(d) Any cost obligation of any dealer incurred as a result of any requirement imposed by subsection (a), (b), or (c) shall be borne by the manufacturer. The transfer of any such cost obligation from a manufacturer to any dealer through franchise or other agreement is prohibited.

(e) If a manufacturer includes in any advertisement a statement respecting the cost or value of emission control devices or systems, such manufacturer shall set forth in such statement the cost or value attributed to such devices or systems by the Secretary of Labor (through the Bureau of Labor Statistics). The Secretary of Labor, and his representatives, shall have the same access for this purpose to the books, documents, papers, and records of a manufacturer as the Comptroller General has to those of a recipient of assistance for purposes of section 311.

(f) Any inspection of a motor vehicle or a motor vehicle engine for purposes of subsection (c)(1), after its sale to the ultimate purchaser, shall be made only if the owner of such vehicle or engine voluntarily permits such inspection to be made, except as may be provided by any State or local inspection program.

## RECORDS AND REPORTS

SEC. 208. (a) Every manufacturer shall establish and maintain such records, make such reports, and provide such information as the Administrator may reasonably require to enable him to determine whether such manufacturer has acted or is acting in compliance with this part and regulations thereunder and shall, upon request of an officer or employee duly designated by the Administrator, permit such officer or employee at reasonable times to have access to and copy such records.

(b) Any records, reports or information obtained under subsection (a) shall be available to the public, except that upon a showing satisfactory to the Administrator by any person that records, reports, or information, or particular part thereof (other than emission data), to which the Administrator has access under this section if made public, would divulge methods or processes entitled to protection as trade secrets of such person, the Administrator shall consider such record, report, or information or particular portion thereof confidential in accordance with the purposes of section 1905 of title 18 of the United States Code, except that such record, report, or information may be disclosed to other officers, employees, or authorized representatives of the United States concerned with carrying out this Act or when relevant in any proceeding under this Act. Nothing in this section shall authorize the withholding of information by the Administrator or any officer or employee under his control, from the duly authorized committees of the Congress.

## STATE STANDARDS

SEC. 209. (a) No State or any political subdivision thereof shall adopt or attempt to enforce any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines subject to this part. No State shall require certification, inspection, or any other approval relating to the control of emissions from any new motor vehicle or new motor vehicle engine as condition precedent to the initial retail sale, titling (if any), or registration of such motor vehicle, motor vehicle engine, or equipment.

(b) The Administrator shall, after notice and opportunity for public hearing, waive application of this section to any State which has adopted standards (other than crankcase emission standards) for the control of emissions from new motor vehicles or new motor vehicle engines prior to March 30, 1966, unless he finds that such State does not require standards more stringent than applicable Federal standards to meet compelling and extraordinary conditions or that such State standards and accompanying enforcement procedures are not consistent with section 202(a) of this part.

(c) Nothing in this part shall preclude or deny to any State or political subdivision thereof the right otherwise to control, regulate, or restrict the use, operation, or movement of registered or licensed motor vehicles.

(d) *Notwithstanding subsection (a) of this section, any State in which a region or portion thereof has been identified pursuant to section 107(d)(1)(A) of this Act may adopt and enforce for model year 1979 the emission standards for light duty motor vehicles required for model*

*year 1980 under section 202(b)(1) of this Act: Provided, That the State shows to the satisfaction of the Administrator that the adoption of the standard in 1979 is required to achieve any ambient air quality standard by 1982 and maintain thereafter. Light duty motor vehicles offered for sale within such State shall be certified to comply with such standards in accordance with the procedures established under section 206 of this Act.*

#### STATE GRANTS

SEC. 210. The Administrator is authorized to make grants to appropriate State agencies in an amount up to two-thirds of the cost of developing and maintaining effective vehicle emission devices and systems inspection and emission testing and control programs, except that—

(1) no such grant shall be made for any part of any State vehicle inspection program which does not directly relate to the cost of the air pollution control aspects of such a program;

(2) no such grant shall be made unless the Secretary of Transportation has certified to the Administrator that such program is consistent with any highway safety program developed pursuant to section 402 of title 23 of the United States Code; and

(3) no such grant shall be made unless the program includes provisions designed to insure that emission control devices and systems on vehicles in actual use have not been discontinued or rendered inoperative.

#### REGULATION OF FUELS

SEC. 211. (a) The Administrator may by regulation designate any fuel or fuel additive and, after such date or dates as may be prescribed by him, no manufacturer or processor of any such fuel or additive may sell, offer for sale, or introduce into commerce such fuel or additive unless the Administrator has registered such fuel or additive in accordance with subsection (b) of this section.

(b)(1) For the purpose of registration of fuels and fuel additives, the Administrator shall require—

(A) the manufacturer of any fuel to notify him as to the commercial identifying name and manufacturer of any additive contained in such fuel; the range of concentration of any additive in the fuel; and the purpose-in-use of any such additive; and

(B) the manufacturer of any additive to notify him as to the chemical composition of such additive.

(2) For the purpose of registration of fuels and fuel additives, the Administrator may also require the manufacturer of any fuel or fuel additive—

(A) to conduct tests to determine potential public health effects of such fuel or additive (including, but not limited to, carcinogenic, teratogenic, or mutagenic effects), and

(B) to furnish the description of any analytical technique that can be used to detect and measure any additive in such fuel, the recommended range of concentration of such additive, and the recommended purpose-in-use of such additive,

and such other information as is reasonable and necessary to determine the emissions resulting from the use of the fuel or additive contained in such fuel, the effect of such fuel or additive on the emission control performance of any vehicle or vehicle engine, or the extent to which such emissions affect the public health or welfare.

Tests under subparagraph (A) shall be conducted in conformity with test procedures and protocols established by the Administrator. The result of such tests shall not be considered confidential.

(3) Upon compliance with the provision of this subsection, including assurances that the Administrator will receive changes in the information required, the Administrator shall register such fuel or fuel additive.

(c)(1) The Administrator may, from time to time on the basis of information obtained under subsection (b) of this section or other information available to him, by regulation, control or prohibit the manufacture, introduction into commerce, offering for sale, or sale of any fuel or fuel additive for use in a motor vehicle or motor vehicle engine (A) if any emission products of such fuel or fuel additive will endanger the public health or welfare, or (B) if emission products of such fuel or fuel additive will impair to a significant degree the performance of any emission control device or system which is in general use, or which the Administrator finds has been developed to a point where in a reasonable time it would be in general use were such regulation to be promulgated.

(2)(A) No fuel, class of fuels, or fuel additive may be controlled or prohibited by the Administrator pursuant to clause (A) of paragraph (1) except after consideration of all relevant medical and scientific evidence available to him, including consideration of other technologically or economically feasible means of achieving emission standards under section 202.

(B) No fuel or fuel additive may be controlled or prohibited by the Administrator pursuant to clause (B) of paragraph (1) except, after consideration of available scientific and economic data, including a cost benefit analysis comparing emission control devices or systems which are or will be in general use and require the proposed control or prohibition with emission control devices or systems which are or will be in general use and do not require the proposed control or prohibition. On request of a manufacturer of motor vehicles, motor vehicle engines, fuels, or fuel additives submitted within 10 days of notice of proposed rulemaking, the Administrator shall hold a public hearing and publish findings with respect to any matter he is required to consider under this subparagraph. Such findings shall be published at the time of promulgation of final regulations.

(C) No fuel or fuel additive may be prohibited by the Administrator under paragraph (1) unless he finds, and publishes such finding, that in his judgment such prohibition will not cause the use of any other fuel or fuel additive which will produce emissions which will endanger the public health or welfare to the same or greater degree than the use of the fuel or fuel additive proposed to be prohibited.

(3)(A) For the purpose of obtaining evidence and data to carry out paragraph (2), the Administrator may require the manufacturer of any motor vehicle or motor vehicle engine to furnish any informa-

tion which has been developed concerning the emissions from motor vehicles resulting from the use of any fuel or fuel additive, or the effect of such use on the performance of any emission control device or system.

(B) In obtaining information under subparagraph (A), section 307(a) (relating to subpoenas) shall be applicable.

(4) (A) Except as otherwise provided in subparagraph (B) or (C), no State (or political subdivision thereof) may prescribe or attempt to enforce, for purposes of motor vehicle emission control, any control or prohibition respecting use of a fuel or fuel additive in a motor vehicle or motor vehicle engine—

(i) if the Administrator has found that no control or prohibition under paragraph (1) is necessary and has published his findings in the Federal Register, or

(ii) if the Administrator has prescribed under paragraph (1) a control or prohibition applicable to such fuel or fuel additive, unless State prohibition or control is identical to the prohibition or control prescribed by the Administrator.

(B) Any State for which application of section 209(a) has at any time been waived under section 209(b) may at any time prescribe and enforce, for the purpose of motor vehicle emission control, a control or prohibition respecting any fuel or fuel additive.

(C) A State may prescribe and enforce, for purposes of motor vehicle emission control, a control or prohibition respecting the use of a fuel or fuel additive in a motor vehicle or motor vehicle engine if an applicable implementation plan for such State under section 110 so provides. The Administrator may approve such provision in an implementation plan, or promulgate an implementation plan containing such a provision, only if he finds that the State control or prohibition is necessary to achieve the national primary or secondary ambient air quality standard which the plan implements.

(d) Any person who violates subsection (a) or the regulations prescribed under subsection (c) or who fails to furnish any information required by the Administrator under subsection (b) shall forfeit and pay to the United States a civil penalty of \$10,000 for each and every day of the continuance of such violation, which shall accrue to the United States and be recovered in a civil suit in the name of the United States, brought in the district where such person has his principal office or in any district in which he does business. The Administrator may, upon application therefor, remit or mitigate any forfeiture provided for in this subsection and he shall have authority to determine the facts upon all such applications.

(e) *The Administrator shall conduct a study and report to Congress by July 1, 1977, on the emission of sulfur-bearing compounds from motor vehicles and motor vehicle engines and aircraft engines. Such study and report shall include but not be limited to a review of the effects of such emissions on public health and welfare and an analysis of the costs and benefits of alternatives to reduce or eliminate such emissions (including desulfurization of fuel, short-term allocation of low sulfur crude oil, technological devices used in conjunction with current engine technologies, alternative engine technologies, and other methods) as may be required to achieve any proposed or promulgated emission standards for sulfur compounds.*

## DEVELOPMENT OF LOW-EMISSION VEHICLES

SEC. 212. (a) For the purpose of this section—

(1) The term "Board" means the Low-Emission Vehicle Certification Board.

(2) The term "Federal Government" includes the legislative, executive, and judicial branches of the Government of the United States, and the government of the District of Columbia.

(3) The term "motor vehicle" means any self-propelled vehicle designed for use in the United States on the highways, other than a vehicle designed or used for military field training, combat, or tactical purposes.

(4) The term "low-emission vehicle" means any motor vehicle which—

(A) emits any air pollutant in amounts significantly below new motor vehicle standards applicable under section 202 at the time of procurement to that type of vehicle; and

(B) with respect to all other air pollutants meets the new motor vehicle standards applicable under section 202 at the time of procurement of that type of vehicle.

(5) The term "retail price" means (A) the maximum statutory price applicable to any class or model of motor vehicle; or (B) in any case where there is no applicable maximum statutory price, the most recent procurement price paid for any class or model of motor vehicle.

(b)(1) There is established a Low-Emission Vehicle Certification Board to be composed of the Administrator or his designee, the Secretary of Transportation or his designee, the Chairman of the Council on Environmental Quality or his designee, the Director of the National Highway Safety Bureau in the Department of Transportation, the Administrator of General Services, and two members appointed by the President. The President shall designate one member of the Board as Chairman.

(2) Any member of the Board not employed by the United States may receive compensation at the rate of \$125 for each day such member is engaged upon work of the Board. Each member of the Board shall be reimbursed for travel expenses, including per diem in lieu of subsistence as authorized by section 5703 of title 5, United States Code, for persons in the Government service employed intermittently.

(3)(A) The Chairman, with the concurrence of the members of the Board, may employ and fix the compensation of such additional personnel as may be necessary to carry out the functions of the Board, but no individual so appointed shall receive compensation in excess of the rate authorized for GS-18 by section 5332 of title 5, United States Code.

(B) The Chairman may fix the time and place of such meetings as may be required, but a meeting of the Board shall be called whenever a majority of its members so request.

(C) The Board is granted all other powers necessary for meeting its responsibilities under this section.

(c) The Administrator shall determine which models or classes of motor vehicles qualify as low-emission vehicles in accordance with the provisions of this section.

(d)(1) The Board shall certify any class or model of motor vehicles—

(A) for which a certification application has been filed in accordance with paragraph (3) of this subsection;

(B) which is a low-emission vehicle as determined by the Administrator; and

(C) which it determines is suitable for use as a substitute for a class or model of vehicles at that time in use by agencies of the Federal Government.

The Board shall specify with particularity the class or model of vehicles for which the class or model of vehicles described in the application is a suitable substitute. In making the determination under this subsection the Board shall consider the following criteria:

(i) the safety of the vehicle;

(ii) its performance characteristics;

(iii) its reliability potential;

(iv) its serviceability;

(v) its fuel availability;

(vi) its noise level; and

(vii) its maintenance costs as compared with the class or model of motor vehicle for which it may be a suitable substitute.

(2) Certification under this section shall be effective for a period of one year from the date of issuance.

(3)(A) Any party seeking to have a class or model of vehicle certified under this section shall file a certification application in accordance with regulations prescribed by the Board.

(B) The Board shall publish a notice of each application received in the Federal Register.

(C) The Administrator and the Board shall make determinations for the purpose of this section in accordance with procedures, prescribed by regulation by the Administrator and the Board, respectively.

(D) The Administrator and the Board shall conduct whatever investigation is necessary, including actual inspection of the vehicle at a place designated in regulations prescribed under subparagraph (A).

(E) The Board shall receive and evaluate written comments and documents from interested parties in support of, or in opposition to, certification of the class or model of vehicle under consideration.

(F) Within ninety days after the receipt of a properly filed certification application, the Administrator shall determine whether such class or model of vehicle is a low-emission vehicle, and within 180 days of such determination, the Board shall reach a decision by majority vote as to whether such class or model of vehicle, having been determined to be a low-emission vehicle, is a suitable substitute for any class or classes of vehicles presently being purchased by the Federal Government for use by its agencies.

(G) Immediately upon making any determination or decision under subparagraph (F), the Administrator and the Board shall each publish in the Federal Register notice of such determination or decision, including reasons therefor and in the case of the Board, any dissenting views.

(e)(1) Certified low-emission vehicles shall be acquired by purchase or lease by the Federal Government for use by the Federal Govern-

ment in lieu of other vehicles if the Administrator of General Services determines that such certified vehicles have procurement costs which are no more than 150 per centum of the retail price of the least expensive class or model of motor vehicle for which they are certified substitutes.

(2) In order to encourage development of inherently low-polluting propulsion technology, the Board may, at its discretion, raise the premium set forth in paragraph (1) of this subsection to 200 per centum of the retail price of any class or model of motor vehicle for which a certified low-emission vehicle is a certified substitute, if the Board determines that the certified low-emission vehicle is powered by an inherently low-polluting propulsion system.

(3) Data relied upon by the Board and the Administrator in determining that a vehicle is a certified low-emission vehicle shall be incorporated in any contract for the procurement of such vehicle.

(f) The procuring agency shall be required to purchase available certified low-emission vehicles which are eligible for purchase to the extent they are available before purchasing any other vehicles for which any low-emission vehicle is a certified substitute. In making purchasing selections between competing eligible, certified low-emission vehicles, the procuring agency shall give priority to (1) any class or model which does not require extensive periodic maintenance to retain its low-polluting qualities or which does not require the use of fuels which are more expensive than those of the classes or models of vehicles for which it is a certified substitute; and (2) passenger vehicles other than buses.

(g) For the purpose of procuring certified low-emission vehicles any statutory price limitations shall be waived.

(h) The Administrator shall, from time to time as the Board deems appropriate, test the emissions from certified low-emission vehicles purchased by the Federal Government. If at any time he finds that the emission rates exceed the rates on which certification under this section was based, the Administrator shall notify the Board. Thereupon the Board shall give the supplier of such vehicles written notice of this finding, issue public notice of it, and give the supplier an opportunity to make necessary repairs, adjustments, or replacements. If no such repairs, adjustments, or replacements are made within a period to be set by the Board, the Board may order the supplier to show cause why the vehicle involved should be eligible for recertification.

(i) There are authorized to be appropriated for paying additional amounts for motor vehicles pursuant to, and for carrying out the provisions of, this section, \$5,000,000 for the fiscal year ending June 30, 1971, and \$25,000,000 for each of the four succeeding fiscal years.

(j) The Board shall promulgate the procedures required to implement this section within one hundred and eighty days after the date of enactment of the Clean Air Act Amendments of 1970.

#### FUEL ECONOMY IMPROVEMENT FROM NEW MOTOR VEHICLES

SEC. 213. (a)(1) The Administrator and the Secretary of Transportation shall conduct a joint study, and shall report to the Committee on Interstate and Foreign Commerce of the United States House of Representatives and the Committees on Public Works

and Commerce of the United States Senate within one hundred and twenty days following the date of enactment of this section, concerning the practicability of establishing a fuel economy improvement standard of 20 per centum for new motor vehicles manufactured during and after model year 1980. Such study and report shall include, but not be limited to, the technological problems of meeting any such standard, including the leadtime involved; the test procedures required to determine compliance; the economic costs associated with such standard, including any beneficial economic impact; the various means of enforcing such standard; the effect on consumption of natural resources, including energy consumed; and the impact of applicable safety and emission standards. In the course of performing such study, the Administrator and the Secretary of Transportation shall utilize the research previously performed in the Department of Transportation, and the Administrator and the Secretary shall consult with the Federal Energy Administrator, the Chairman of the Council on Environmental Quality, and the Secretary of the Treasury. The Office of Management and Budget may review such report before its submission to such committees of the Congress, but such Office may not revise the report or delay its submission beyond the date prescribed for its submission, and may submit to Congress its comments respecting such report. In connection with such study, the Administrator may utilize the authority provided in section 307(a) of this Act to obtain necessary information.

(2) For the purpose of this section, the term "fuel economy improvement standard" means a requirement of a percentage increase in the number of miles of transportation provided by a manufacturer's entire annual production of new motor vehicles per unit of fuel consumed, as determined for each manufacturer in accordance with test procedures established by the Administrator pursuant to this Act. Such term shall not include any requirement for any design standard or any other requirement specifying or otherwise limiting the manufacturer's discretion in deciding how to comply with the fuel economy improvement standard by any lawful means.

#### DEFINITIONS FOR PART A

SEC. 214. As used in this part—

(1) The term "manufacturer" as used in sections 202, 203, 206, 207, and 208 means any person engaged in the manufacturing or assembling of new motor vehicles or new motor vehicle engines, or importing such vehicles or engines for resale, or who acts for and is under the control of any such person in connection with the distribution of new motor vehicles or new motor vehicle engines, but shall not include any dealer with respect to new motor vehicles or new motor vehicle engines received by him in commerce.

(2) The term "motor vehicle" means any self-propelled vehicle designed for transporting persons or property on a street or highway.

(3) Except with respect to vehicles or engines imported or offered for importation, the term "new motor vehicle" means a motor vehicle the equitable or legal title to which has never

been transferred to an ultimate purchaser; and the term "new motor vehicle engine" means an engine in a new motor vehicle or a motor vehicle engine the equitable or legal title to which has never been transferred to the ultimate purchaser; and with respect to imported vehicles or engines, such terms mean a motor vehicle and engine, respectively, manufactured after the effective date of a regulation issued under section 202 which is applicable to such vehicle or engine (or which could be applicable to such vehicle or engine had it been manufactured for importation into the United States).

(4) The term "dealer" means any person who is engaged in the sale or the distribution of new motor vehicles or new motor vehicle engines to the ultimate purchaser.

(5) The term "ultimate purchaser" means, with respect to any new motor vehicle or new motor vehicle engine, the first person who in good faith purchases such new motor vehicle or new engine for purposes other than resale.

(6) The term "commerce" means (A) commerce between any place in any State and any place outside thereof; and (B) commerce wholly within the District of Columbia.

## PART B—AIRCRAFT EMISSION STANDARDS

### ESTABLISHMENT OF STANDARDS

SEC. 231. (a)(1) Within 90 days after the date of enactment of the Clean Air Amendments of 1970, the Administrator shall commence a study and investigation of emissions of air pollutants from aircraft in order to determine—

(A) the extent to which such emissions affect air quality in air quality control regions throughout the United States, and

(B) the technological feasibility of controlling such emissions.

(2) Within 180 days after commencing such study and investigation, the Administrator shall publish a report of such study and investigation and shall issue proposed emission standards applicable to emissions of any air pollutant from any class or classes of aircraft or aircraft engines which in his judgment cause or contribute to or are likely to cause or contribute to air pollution which endangers the public health or welfare.

(3) The Administrator shall hold public hearings with respect to such proposed standards. Such hearings shall, to the extent practicable, be held in air quality control regions which are most seriously affected by aircraft emissions. Within 90 days after the issuance of such proposed regulations, he shall issue such regulations with such modifications as he deems appropriate. Such regulations may be revised from time to time.

(b) Any regulation prescribed under this section (and any revision thereof) shall take effect after such period as the Administrator finds necessary (after consultation with the Secretary of Transportation) to permit the development and application of the requisite technology giving appropriate consideration to the cost of compliance within such period.

(c) Any regulations under this section, or amendments thereto, with respect to aircraft, shall be prescribed only after consultation with the Secretary of Transportation in order to assure appropriate consideration for aircraft safety.

#### ENFORCEMENT OF STANDARDS

SEC. 232. (a) The Secretary of Transportation, after consultation with the Administrator, shall prescribe regulations to insure compliance with all standards prescribed under section 231 by the Administrator. The regulations of the Secretary of Transportation shall include provisions making such standards applicable in the issuance, amendment, modification, suspension, or revocation of any certificate authorized by the Federal Aviation Act or the Department of Transportation Act. Such Secretary shall insure that all necessary inspections are accomplished, and, may execute any power or duty vested in him by any other provision of law in the execution of all powers and duties vested in him under this section.

(b) In any action to amend, modify, suspend, or revoke a certificate in which violation of an emission standard prescribed under section 231 or of a regulation prescribed under subsection (a) is at issue, the certificate holder shall have the same notice and appeal rights as are prescribed for such holders in the Federal Aviation Act of 1958 or the Department of Transportation Act, except that in any appeal to the National Transportation Safety Board, the Board may amend, modify, or revoke the order of the Secretary of Transportation only if it finds no violation of such standard or regulation and that such amendment, modification, or revocation is consistent with safety in air transportation.

#### STATE STANDARDS AND CONTROLS

SEC. 233. No State or political subdivision thereof may adopt or attempt to enforce any standard respecting emissions of any air pollutant from any aircraft or engine thereof unless such standard is identical to a standard applicable to such aircraft under this part.

#### DEFINITIONS

SEC. 234. Terms used in this part (other than Administrator) shall have the same meaning as such terms have under section 101 of the Federal Aviation Act of 1958.

#### PART C—RAILROAD LOCOMOTIVE EMISSION STANDARDS

SEC. 235. (a)(1) *Within ninety days after the date of enactment of the Clean Air Amendments of 1976, the Administrator shall commence a study and investigation of emissions of air pollutants from railroad locomotives, locomotive engines, and secondary power sources on railroad rolling stock, in order to determine—*

(A) *the extent to which such emissions affect air quality in air quality control regions throughout the United States, and*

(B) *the technological feasibility of controlling such emissions.*

(2)(A) *Within one hundred and eighty days after commencing such study and investigation, the Administrator shall publish a report of such study and investigation and shall publish proposed emission regulations applicable to emissions of any air pollutant from any class or classes of locomotives, locomotive engines and secondary power sources on railroad rolling stock, which in his judgment cause or contribute to or are likely to cause or contribute to air pollution which endangers the public health or welfare.*

(B) *Such proposed regulations shall include emission standards setting limits on air pollutant emissions which reflect the degree of emission reduction achievable through the application of the best available technology, taking into account the cost of compliance, as determined by the Administrator. Such regulations may identify the type of technology available to achieve such reduction.*

(3) *The Administrator shall hold public hearings with respect to such proposed regulations. Within ninety days after the issuance of such proposed regulations, he shall issue such regulations with such modification as he deems appropriate. Such regulations may be revised from time to time.*

(b) *Any regulation prescribed under this section (and any revision thereof) shall take effect after such period as the Administrator finds necessary (after consultation with the Secretary of Transportation) to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period.*

(c) *Any regulations under this section, or amendments thereto, with respect to locomotives, locomotive engines, and secondary power sources on railroad rolling stock, shall be prescribed only after consultation with the Secretary of Transportation in order to assure appropriate consideration for safety.*

SEC. 236. *The Secretary of Transportation, after consultation with the Administrator, shall prescribe regulations to insure compliance with all standards prescribed under section 235 by the Administrator. Such Secretary shall insure that all necessary inspections are accomplished and may execute any power or duty vested in him by any other provision of law in the execution of all powers and duties vested in him under this section.*

SEC. 237. *After the effective date of regulation under section 235 of this Act no State or political subdivision thereof may adopt or enforce any standard respecting emissions of any air pollutant from any railroad locomotives, locomotive engines, or secondary power sources on railroad rolling stock, unless such standard is identical to a standard applicable to emissions prescribed by any regulation under this part.*

### TITLE III—GENERAL

#### ADMINISTRATION

SEC. 301. (a) *The Administrator is authorized to prescribe such regulations as are necessary to carry out his functions under this Act. The Administrator may delegate to any officer or employee of the Environmental Protection Agency such of his powers and duties under this Act, except the making of regulations, as he may deem necessary or expedient.*

(b) Upon the request of an air pollution control agency, personnel of the Environmental Protection Agency may be detailed to such agency for the purpose of carrying out the provisions of this Act.

(c) Payments under grants made under this Act may be made in installments, and in advance or by way of reimbursement, as may be determined by the Administrator.

#### DEFINITIONS

SEC. 302. When used in this Act—

(a) The term "Administrator" means the Administrator of the Environmental Protection Agency.

(b) The term "air pollution control agency" means any of the following:

(1) A single State agency designated by the Governor of that State as the official State air pollution control agency for purposes of this Act;

(2) An agency established by two or more States and having substantial powers or duties pertaining to the prevention and control of air pollution;

(3) A city, county, or other local government health authority, or, in the case of any city, county, or other local government in which there is an agency other than the health authority charged with responsibility for enforcing ordinances or laws relating to the prevention and control of air pollution, such other agency; or

(4) An agency of two or more municipalities located in the same State or in different States and having substantial powers or duties pertaining to the prevention and control of air pollution.

(c) The term "interstate air pollution control agency" means—

(1) an air pollution control agency established by two or more States, or

(2) an air pollution control agency of two or more municipalities located in different States.

(d) The term "State" means a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, and American Samoa.

(e) The term "person" includes an individual, corporation, partnership, association, State, municipality, and political subdivision of a State.

(f) The term "municipality" means a city, town, borough, county, parish, district, or other public body created by or pursuant to State law.

(g) The term "air pollutant" means an air pollution agent or combination of such agents.

(h) All language referring to effects on welfare includes, but is not limited to, effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being.

(i) The term "emission limitation" means a requirement established by a State or the Administrator which limits the quantity, rate, or con-

centration of emissions of air pollutants on a continuous basis, including a detailed schedule and timetable of compliance.

(j) The term "schedule and timetable of compliance" means a schedule of remedial measures including an enforceable sequence of actions or operations leading to compliance with an emission limitation, other limitation, prohibition, or standard.

(k) The term "major emitting facility" means any stationary source of air pollutants which emits, or has the potential to emit, 100 tons per year or more of any air pollutant, except that for the purposes of section 110(g) of this Act, the term is limited to the following types of such stationary sources: fossil-fuel fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (thermal dryers), kraft pulp mills, Portland Cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fule conversion plants, sintering plants, secondary metal production facilities, chemical process plants, fossil-fuel boilers of more than 250 million British thermal units per hour heat input, petroleum storage and transfer facilities with a capacity exceeding 300,000 barrels, taconite ore processing facilities, fiber glass processing plants, charcoal production facilities, and such other major emitting facilities as the Administrator determines to be significant potential sources of air pollutants.

(l) The term "baseline air quality concentration" refers to the ambient concentration levels which exist at the time of the first application for a permit in an area under section 110(g) of this Act, based on air quality data available in the Environmental Protection Agency or an air pollution control agency and such monitoring data as the permitting authority may require the permit applicant to submit. Such ambient concentration levels shall take into account all projected emissions in, or which may affect, such area from any major emitting facility on which construction commenced prior to January 6, 1975, but which has not begun operation by the date of the baseline air quality concentration determination. Emissions of sulfur oxides and particulate matter from any major emitting facility on which construction commenced after January 6, 1975, shall be accounted against the limitations on projected increases in pollutant concentrations established in paragraphs (2) and (5) of section 110(g) of this Act.

(m) The term "stationary source" shall have the same meaning as such term has under section 111(a)(3) of this Act.

#### EMERGENCY POWERS

SEC. 303. Notwithstanding any other provisions of this Act, the Administrator upon receipt of evidence that a pollution source or combination of sources (including moving sources) is presenting an imminent and substantial endangerment to the health of persons, and that appropriate State or local authorities have not acted to abate such sources, may bring suit on behalf of the United States in the appropriate United States district court to immedi-

ately restrain any person causing or contributing to the alleged pollution to stop the emission of air pollutants causing or contributing to such pollution or to take such other action as may be necessary.

#### CITIZEN SUITS

SEC. 304. (a) Except as provided in subsection (b), any person may commence a civil action on his own behalf—

(1) against any person (including (i) the United States, and (ii) any other governmental instrumentality or agency to the extent permitted by the Eleventh Amendment to the Constitution) who is alleged to be in violation of (A) an emission standard or limitation under this Act or (B) an order issued by the Administrator or a State with respect to such a standard or limitation, or

(2) against the Administrator where there is alleged a failure of the Administrator to perform any act or duty under this Act which is not discretionary with the Administrator[.] or

(3) *against any person who proposes to construct or constructs any new major emitting facility without a permit required under section 110(g) of this Act or who is alleged to be in violation of any condition of such permit.*

The district courts shall have jurisdiction, without regard to the amount in controversy or the citizenship of the parties, to enforce such an emission standard or limitation, or such an order, or to order the Administrator to perform such act or duty, as the case may be.

(b) No action may be commenced—

(1) under subsection (a)(1)—

(A) prior to 60 days after the plaintiff has given notice of the violation (i) to the Administrator, (ii) to the State in which the violation occurs, and (iii) to any alleged violator of the standard, limitation, or order, or

(B) if the Administrator or State has commenced and is diligently prosecuting a civil action in a court of the United States or a State to require compliance with the standard, limitation, or order, but in any such action in a court of the United States any person may intervene as a matter of right.

(2) under subsection (a)(2) prior to 60 days after the plaintiff has given notice of such action to the Administrator, except that such action may be brought immediately after such notification in the case of an action under this section respecting a violation of section 112(c)(1)(B) or an order issued by the Administrator pursuant to section 113(a). Notice under this subsection shall be given in such manner as the Administrator shall prescribe by regulation.

(c)(1) Any action respecting a violation by a stationary source of an emission standard or limitation or an order respecting such standard or limitation may be brought only in the judicial district in which such source is located.

(2) In such action under this section, the Administrator, if not a party, may intervene as a matter of right.

(d) The court, in issuing any final order in any action brought pursuant to subsection (a) of this section, may award costs of litigation (including reasonable attorney and expert witness fees) to any party, whenever the court determines such award is appropriate. The court may, if a temporary restraining order or preliminary injunction is sought, require the filing of a bond or equivalent security in accordance with the Federal Rules of Civil Procedure.

(e) Nothing in this section shall restrict any right which any person (or class of persons) may have under any statute or common law to seek enforcement of any emission standard or limitation or to seek any other relief (including relief against the Administrator or a State agency).

(f) For purposes of this section, the term "emission standard or limitation under this Act" means—

(1) a *requirement*, schedule or timetable of compliance, emission limitation, standard of performance or emission standard, or

(2) a control or prohibition respecting a motor vehicle fuel or fuel additive,

which is in effect under this Act (including a requirement applicable by reason of section 118) or under an applicable implementation plan.

#### APPEARANCE

SEC. 305. The Administrator shall request the Attorney General to appear and represent him in any civil action instituted under this Act to which the Administrator is a party. Unless the Attorney General notifies the Administrator that he will appear in such action, within a reasonable time, attorneys appointed by the Administrator shall appear and represent him.

#### FEDERAL PROCUREMENT

SEC. 306. (a) No Federal agency may enter into any contract with any person who is convicted of any offense under section 113(c) (1) for the procurement of goods, materials and services to perform such contract at any facility at which the violation which gave rise to such conviction occurred if such facility is owned, leased, or supervised by such person. The prohibition in the preceding sentence shall continue until the Administrator certifies that the condition giving rise to such a conviction has been corrected.

(b) The Administrator shall establish procedures to provide all Federal agencies with the notification necessary for the purposes of subsection (a).

(c) In order to implement the purposes and policy of this Act to protect and enhance the quality of the Nation's air, the President shall, not more than 180 days after enactment of the Clean Air Act Amendments of 1970 cause to be issued an order (1) requiring each Federal agency authorized to enter into contracts and each Federal agency which is empowered to extend Federal assistance by way of grant, loan, or contract to effectuate the purpose and policy of this Act in such contracting or assistance activities, and (2) setting forth procedures, sanctions, penalties, and

such other provisions, as the President determines necessary to carry out such requirement.

(d) The President may exempt any contract, loan, or grant from all or part of the provisions of this section where he determines such exemption is necessary in the paramount interest of the United States and he shall notify the Congress of such exemption.

(e) The President shall annually report to the Congress on measures taken toward implementing the purpose and intent of this section, including but not limited to the progress and problems associated with implementation of this section.

GENERAL PROVISION RELATING TO ADMINISTRATIVE PROCEEDINGS  
AND JUDICIAL REVIEW

SEC. 307. (a)(1) In connection with any determination under section 110(f) or section 202(b)(5), or for purposes of obtaining information under section 202(b)(4) or 211(c)(3), the Administrator may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents, and he may administer oaths. Except for emission data, upon a showing satisfactory to the Administrator by such owner or operator that such papers, books, documents, or information or particular part thereof, if made public, would divulge trade secrets or secret processes of such owner or operator, the Administrator shall consider such record, report, or information or particular portion thereof confidential in accordance with the purposes of section 1905 of title 18 of the United States Code, except that such paper, book, document, or information may be disclosed to other officers, employees, or authorized representatives of the United States concerned with carrying out this Act, to persons carrying out the National Academy of Sciences' study and investigation provided for in section 202(c), or when relevant in any proceeding under this Act. Witnesses summoned shall be paid the same fees and mileage that are paid witnesses in the courts of the United States. In cases of contumacy or refusal to obey a subpoena served upon any person under this subparagraph, the district court of the United States for any district in which such person is found or resides or transacts business, upon application by the United States and after notice to such person, shall have jurisdiction to issue an order requiring such person to appear and give testimony before the Administrator to appear and produce papers, books, and documents before the Administrator, or both, and any failure to obey such order of the court may be punished by such court as a contempt thereof.

(b)(1) A petition for review of action of the Administrator in promulgating any national primary or secondary ambient air quality standard, any emission standard under section 112, any standard of performance under section 111, any standard under section 202 (other than a standard required to be prescribed under section 202(b)(1)), any determination under section 202(b)(5), any control or prohibition under section 211, or any standard under section 231 may be filed only in the United States Court of Appeals for the District of Columbia. A petition for review of the Administrator's action in approving or promulgating any implementation plan under section

110 or section 111(d), or his action under section 119(c)(2) (A), (B), or (C) or under regulations thereunder, may be filed only in the United States Court of Appeals for the appropriate circuit. Any such petition shall be filed within 30 days from the date of such promulgation, approval, or action, or after such date if such petition is based solely on grounds arising after such 30th day.

(2) Action of the Administrator with respect to which review could have been obtained under paragraph (1) shall not be subject to judicial review in civil or criminal proceedings for enforcement.

(c) In any judicial proceeding in which review is sought of a determination under this Act required to be made on the record after notice and opportunity for hearing, if any party applies to the court for leave to adduce additional evidence, and shows to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for the failure to adduce such evidence in the proceeding before the Administrator, the court may order such additional evidence (and evidence in rebuttal thereof) to be taken before the Administrator, in such manner and upon such terms and conditions as to the court may deem proper. The Administrator may modify his findings as to the facts, or make new findings, by reason of the additional evidence so taken and he shall file such modified or new findings, and his recommendation, if any, for the modification or setting aside of his original determination, with the return of such additional evidence.

(d) *In any judicial proceeding under this Act in which the United States or an officer or employee thereof is a party (other than as an intervenor), any party other than the United States which prevails in such action shall recover from the United States the reasonable costs for such party's participation in such proceeding, including reasonable attorney's fees, expert witness fees, and the costs of any studies, analyses, tests, or engineering reports that the court finds were necessary to litigate such action. In any case in which such party prevails in part, the court shall have discretion to award such reasonable costs.*

#### MANDATORY LICENSING

SEC. 308. Whenever the Attorney General determines, upon application of the Administrator—

(1) that—

(A) in the implementation of the requirements of section 111, 112, or 202 of this Act, a right under any United States letters patent, which is being used or intended for public or commercial use and not otherwise reasonably available, is necessary to enable any person required to comply with such limitation to so comply, and

(B) there are no reasonable alternative methods to accomplish such purpose, and

(2) that the unavailability of such right may result in a substantial lessening of competition or tendency to create a monopoly in any line of commerce in any section of the country, the Attorney General may so certify to a district court of the United States, which may issue an order requiring the person who owns such patent to license it on such reasonable terms and conditions as the

court, after hearing, may determine. Such certification may be made to the district court for the district in which the person owning the patent resides, does business, or is found.

#### POLICY REVIEW

SEC. 309. (a) The Administrator shall review and comment in writing on the environmental impact of any matter relating to duties and responsibilities granted pursuant to this Act or other provisions of the authority of the Administrator, contained in any (1) legislation proposed by any Federal department or agency, (2) newly authorized Federal projects for construction and any major Federal agency action (other than a project for construction) to which section 102(2)(C) of Public Law 91-190 applies, and (3) proposed regulations published by any department or agency of the Federal Government. Such written comment shall be made public at the conclusion of any such review.

(b) In the event the Administrator determines that any such legislation, action, or regulation is unsatisfactory from the standpoint of public health or welfare or environmental quality, he shall publish his determination and the matter shall be referred to the Council on Environmental Quality.

#### OTHER AUTHORITY NOT AFFECTED

SEC. 310. (a) Except as provided in subsection (b) of this section, this Act shall not be construed as superseding or limiting the authorities and responsibilities, under any other provision of law, of the Administrator or any other Federal officer, department, or agency.

(b) No appropriation shall be authorized or made under section 301, 311, or 314 of the Public Health Service Act for any fiscal year after the fiscal year ending June 30, 1964, for any purpose for which appropriations may be made under authority of this Act.

#### RECORDS AND AUDIT

SEC. 311. (a) Each recipient of assistance under this Act shall keep such records as the Administrator shall prescribe, including records which fully disclose the amount and disposition by such recipient of the proceeds of such assistance, the total cost of the project or undertaking in connection with which such assistance is given or used, and the amount of that portion of the cost of the project or undertaking supplied by other sources, and such other records as will facilitate an effective audit.

(b) The Administrator and the Comptroller General of the United States, or any of their duly authorized representatives, shall have access for the purpose of audit and examinations to any books, documents, papers, and records of the recipients that are pertinent to the grants received under this Act.

#### COMPREHENSIVE ECONOMIC COST STUDIES

SEC. 312. (a) In order to provide the basis for evaluating programs authorized by this Act and the development of new programs and to furnish the Congress with the information necessary for

authorization of appropriations by fiscal years beginning after June 30, 1969, the Administrator, in cooperation with State, interstate, and local air pollution control agencies, shall make a detailed estimate of the cost of carrying out the provisions of this Act; a comprehensive study of the cost of program implementation by affected units of government; and a comprehensive study of the economic impact of air quality standards on the Nation's industries, communities, and other contributing sources of pollution, including an analysis of the national requirements for and the cost of controlling emissions to attain such standards of air quality as may be established pursuant to this Act or applicable State law. The Administrator shall submit such detailed estimate and the results of such comprehensive study of cost for the five-year period beginning July 1, 1969, and the results of such other studies, to the Congress not later than January 10, 1969, and shall submit a reevaluation of such estimate and studies annually thereafter.

(b) The Administrator shall also make a complete investigation and study to determine (1) the need for additional trained State and local personnel to carry out programs assisted pursuant to this Act and other programs for the same purpose as this Act; (2) means of using existing Federal training programs to train such personnel; and (3) the need for additional trained personnel to develop, operate and maintain those pollution control facilities designed and installed to implement air quality standards. He shall report the results of such investigation and study to the President and the Congress not later than July 1, 1969.

#### ADDITIONAL REPORTS TO CONGRESS

SEC. 313. Not later than six months after the effective date of this section and not later than January 10 of each calendar year beginning after such date, the Administrator shall report to the Congress on measures taken toward implementing the purpose and intent of this Act including, but not limited to, (1) the progress and problems associated with control of automotive exhaust emissions and the research efforts related thereto; (2) the development of air quality criteria and recommended emission control requirements; (3) the status of enforcement actions taken pursuant to this Act; (4) the status of State ambient air standards setting, including such plans for implementation and enforcement as have been developed; (5) the extent of development and expansion of air pollution monitoring systems; (6) progress and problems related to development of new and improved control techniques; (7) the development of quantitative and qualitative instrumentation to monitor emissions and air quality; (8) standards set or under consideration pursuant to title II of this Act; (9) the status of State, interstate, and local pollution control programs established pursuant to and assisted by this Act; and (10) the reports and recommendations made by the President's Air Quality Advisory Board.

#### EMPLOYEE PROTECTION

SEC. 314. (a) *No person shall fire, or in any other way discriminate against, or cause to be fired or discriminated against, any employee or*

any authorized representative of employees by reason of the fact that such employee or representative has filed, instituted, or caused to be filed or instituted any proceeding under this Act or under any applicable implementation plan, or has testified or is about to testify in any proceeding resulting from the administration or enforcement of the provisions of this Act or of any applicable implementation plan.

(b) Any employee or a representative of employees who believes that he has been fired or otherwise discriminated against by any person in violation of subsection (a) of this section may, within thirty days after such alleged violation occurs, apply to the Secretary of Labor for a review of such firing or alleged discrimination. A copy of the application shall be sent to such person who shall be the respondent. Upon receipt of such application, the Secretary of Labor shall cause such investigation to be made as he deems appropriate. Such investigation shall provide an opportunity for a public hearing at the request of any party to such review to enable the parties to present information relating to such alleged violation. The parties shall be given written notice of the time and place of the hearing at least five days prior to the hearing. Any such hearing shall be of record and shall be subject to section 554 of title 5 of the United States Code. Upon receiving the report of such investigation, the Secretary of Labor shall make findings of fact. If he finds that such violation did occur, he shall issue a decision, incorporating an order therein and his findings, requiring the party committing such violation to take such affirmative action to abate the violation as the Secretary of Labor deems appropriate, including, but not limited to, the rehiring or reinstatement of the employee or representative of employees to his former position with compensation. If he finds that there was no such violation, he shall issue an order denying the application. Such order issued by the Secretary of Labor under this subparagraph shall be subject to judicial review in the same manner as orders and decisions of the Administrator are subject to judicial review under this Act.

(c) Whenever an order is issued under this section to abate such violation, at the request of the applicant, a sum equal to the aggregate amount of all costs and expenses (including the attorney's fees) as determined by the Secretary of Labor, to have been reasonably incurred by the applicant for, or in connection with, the institution and prosecution of such proceedings, shall be assessed against the person committing such violation.

(d) This section shall have no application to any employee who, acting without direction from his employer (or his agent) deliberately violates any requirement of an applicable implementation plan approved or promulgated under section 110 of this Act, a new source performance standard under section 111 of this Act, a standard for hazardous emissions under section 112 of this Act, any requirement relating to inspections under section 114 of this Act, or any other prohibition or limitation established under this Act.

(e) The Administrator shall conduct continuing evaluations of potential loss or shifts of employment which may result from the administration or enforcement of the provision of this Act and applicable implementation plans, including where appropriate, investigating threatened plant closures or reductions in employment allegedly resulting from such administration or enforcement. Any employee who is discharged, or laid off, threatened with discharge or layoff, or otherwise discriminated against

by any person because of the alleged results of such administration or enforcement, or any representative of such employee, may request the Administrator to conduct a full investigation of the matter. The Administrator shall thereupon investigate the matter and, at the request of any party, shall hold public hearings on not less than five days' notice, and shall at such hearings require the parties, including the employer involved, to present information relating to the actual or potential effect of such administration or enforcement on employment and on any alleged discharge, layoff, or other discrimination and the detailed reasons or justification therefor. Any such hearing shall be of record and shall be subject to section 554 of title 5 of the United States Code. Upon receiving the report of such investigation, the Administrator shall make findings of fact as to the effect of such administration or enforcement on employment and on the alleged discharge, layoff, or discrimination and shall make such recommendations as he deems appropriate. Such report, findings, and recommendations shall be available to the public. Nothing in this subsection shall be construed to require or authorize the Administrator or any State to modify or withdraw any standard, limitation, or any other requirement of this Act or any applicable implementation plan.

#### NATIONAL COMMISSION ON AIR QUALITY

"SEC. 315. (a) There is established a National Commission on Air Quality which shall study and report to the Congress on:

"(1) the economic, technological, and environmental consequences of achieving or not achieving the purposes of this Act and programs authorized by it;

"(2) available alternatives, including enforcement mechanisms to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and to achieve the other purposes of the Act, including achievement and maintenance of national ambient air quality standards and prevention of significant deterioration of air quality;

"(3) the technological capability of achieving and the economic, energy and environmental impacts of achieving or not achieving required emission control levels for mobile sources of oxides of nitrogen (including the research objective of 0.4 grams per vehicle mile) in relation to and independent of regulation of emissions of oxides of nitrogen from stationary sources;

"(4) air pollutants not presently regulated, which pose or may in the future pose a threat to public health or public welfare and options available to regulate emissions of such pollutants;

"(5) the adequacy of research, development and demonstrations being carried out by Federal, State, local, and nongovernmental entities to protect and enhance air quality;

"(6) the ability of (including financial resources, manpower and statutory authority) Federal, State and local institutions to implement the purposes of the Act.

(b) Such Commission shall be composed of fifteen members, including the Chairman and the Ranking Minority Member of the Senate Committee on Public Works and the House Committee on Interstate and Foreign Commerce, who shall serve on such Commission *ex officio* and without vote, and eleven members of the public appointed by the President. The Chairman of such Commission shall be elected from among its members.

(c) *The heads of the departments, agencies, and instrumentalities of the executive branch of the Federal Government shall cooperate with the Commission in carrying out the requirements of this section, and shall furnish to the Commission such information as the Commission deems necessary to carry out this section.*

(d) *A report, together with any appropriate recommendations, shall be submitted to the Congress on the results of the investigation and study concerning section (a) (3) of this section no later than March 1, 1977, in order that Congress may have this information in a timely fashion if it deems further changes are needed in the requirements for control of emissions of oxides of nitrogen under this Act.*

(e) *A report shall be submitted with regard to all other Commission studies and investigations, together with any appropriate recommendations, not later than three years after the date of enactment of this section.*

(f) *The members of the Commission who are not officers or employees of the United States, while attending conferences or meetings of the Commission or while otherwise serving at the request of the Chairman shall be entitled to receive compensation at a rate not in excess of the maximum rate of pay for grade GS-18, as provided in the General Schedule under section 5332 of title V of the United States Code, including traveltime and while away from their homes or regular places of business they may be allowed travel expenses, including per diem in lieu of subsistence as authorized by law (5 U.S.C. 73b-2) for persons in the Government service employed intermittently.*

(g) *There is authorized to be appropriated, for use in carrying out this section, not to exceed \$17,000,000.*

(h) *In the conduct of the study, the Commission is authorized to contract with nongovernmental entities that are competent to perform research or investigations in areas within the Commission's mandate, and to hold public hearings, forums, and workshops to enable full public participation.*

#### LABOR STANDARDS

SEC. [314] 316. The Administrator shall take such action as may be necessary to insure that all laborers and mechanics employed by contractors or subcontractors on projects assisted under this Act shall be paid wages at rates not less than those prevailing for the same type of work on similar construction in the locality as determined by the Secretary of Labor, in accordance with the Act of March 3, 1931, as amended, known as the Davis-Bacon Act (46 Stat. 1494; 40 U.S.C. 276a-276a-5). The Secretary of Labor shall have, with respect to the labor standards specified in this subsection, the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (15 F.R. 3176; 64 Stat. 1267) and section 2 of the Act of June 13, 1934, as amended (48 Stat. 948; 40 U.S.C. 276c).

#### SEPARABILITY

SEC. [315] 317. If any provision of this Act, or the application of any provision of this Act to any person or circumstance, is held invalid, the application of such provision to other persons or circumstances, and the remainder of this Act, shall not be affected thereby.

## APPROPRIATIONS

**[SEC. 316.** There are authorized to be appropriated to carry out this Act, other than sections 103(f)(3) and (d), 104, 212, and 403, \$125,000,000 for the fiscal year ending June 30, 1971, \$225,000,000 for the fiscal year ending June 30, 1972, \$300,000,000 for the fiscal year ending June 30, 1973, \$300,000,000 for the fiscal year ending June 30, 1974, and \$300,000,000 for the fiscal year ending June 30, 1975.]

*Sec. 318. There are authorized to be appropriated to carry out this Act, other than sections 103(f)(3) and (d), 104, 110(h)(8), 150 through 159, 212, 315, and 403, not to exceed \$300,000,000,000 for the fiscal year ending June 30, 1976, \$75,000,000 for the transition period ending September 30, 1976, and \$200,000,000 for each of fiscal years 1977 and 1978. There are authorized to be appropriated to carry out section 110(h)(8) of this Act \$75,000,000 to be available until expended.*

# MAJOR AMENDMENTS PROPOSED TO THE CLEAN AIR ACT

94TH CONGRESS  
1ST SESSION

## S. 693

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IN THE SENATE OF THE UNITED STATES

FEBRUARY 17, 1975

Mr. WILLIAM L. SCOTT (for himself, Mr. CURTIS, Mr. EASTLAND, Mr. FANNIN, Mr. GOLDWATER, Mr. HELMS, and Mr. THURMOND) introduced the following bill; which was read twice and referred to the Committee on Public Works

---

## A BILL

To amend the Clean Air Act to establish a limitation on certain air quality standards established pursuant to such Act.

1       *Be it enacted by the Senate and House of Representa-*  
2       *tives of the United States of America in Congress assembled,*  
3       That section 101 (b) (1) of the Clean Air Act (42 U.S.C.  
4       1857 (b) (1) ) is amended to read as follows:

5               “(1) to protect and enhance the quality of the Na-  
6       tion’s air resources by establishing, achieving, and main-  
7       taining national ambient air quality standards, standards  
8       of performance for new stationary sources, and national  
9       emission standards for hazardous air pollutants so as to  
10      promote the public health and welfare and the productive

VII—O

(49 29)

1, capacity of the Nation, but nothing in this Act is in-  
2 tended to require or provide for the establishment of  
3 standards more stringent than primary and secondary  
4 ambient air quality standards;”.

94TH CONGRESS  
1ST SESSION

# S. 694

## IN THE SENATE OF THE UNITED STATES

FEBRUARY 17, 1975

Mr. WILLIAM L. SCOTT (for himself, Mr. EASTLAND, Mr. FANNIN, Mr. GOLDWATER, Mr. HELMS, and Mr. THURMOND) introduced the following bill; which was read twice and referred to the Committee on Public Works

## A BILL

To amend the Clean Air Act with respect to certain stationary source emission limitations.

1       *Be it enacted by the Senate and House of Representa-*  
2       *tives of the United States of America in Congress assembled,*  
3       That this Act may be cited as the "Fuel Emergency Clean  
4       Air Act Amendments of 1975".

### EXTENSIONS OF COMPLIANCE FOR

### CERTAIN POWERPLANTS

7       SEC. 2. Section 119 of the Clean Air Act is amended  
8       by adding subsection (l) as follows:

9       “(l) The Administrator shall extend for a period ending  
10      not later than January 1, 1985, any stationary source fuel

1 or emission limitation respecting emissions of sulfur oxides  
2 from a powerplant using coal as its primary source on the  
3 date of enactment of this subsection, or a powerplant which  
4 on the date of enactment of this subsection uses oil or natural  
5 gas as its primary energy source but which thereafter enters  
6 into contracts or other enforceable obligations to convert to  
7 coal as a primary energy source, if he finds that such  
8 powerplant can apply measures in the interim which provide  
9 a means for attaining and maintaining national primary  
10 ambient air quality standards for sulfur oxides in the area  
11 affected by the emissions of the powerplant complex of which  
12 such powerplant is a part. Such interim measures include,  
13 but are not limited to, intermittent control systems.

94TH CONGRESS  
1ST SESSION

# S. 695

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## IN THE SENATE OF THE UNITED STATES

FEBRUARY 17, 1975

Mr. WILLIAM L. SCOTT (for himself, Mr. EASTLAND, Mr. FANNIN, Mr. HELMS, Mr. LAXALT, and Mr. THURMOND) introduced the following bill; which was read twice and referred to the Committee on Public Works

---

## A BILL

To amend the Clean Air Act with respect to certain motor vehicle emission standards.

1       *Be it enacted by the Senate and House of Representa-*  
2       *tives of the United States of America in Congress assembled,*  
3       That the Clean Air Act is amended as follows:

4       (1) In section 202 (b) (1) (A) (42 U.S.C. 1857f-1  
5       (b) (1) (A)) after the first sentence insert the following:  
6       “The regulations under subsection (a) applicable to emis-  
7       sions of carbon monoxide and hydrocarbons from light duty  
8       vehicles and engines manufactured during model years 1977  
9       through 1981 shall contain standards which provide that  
10      such emissions from such vehicles and engines may not ex-

1   ceed 15 grams per vehicle mile of carbon monoxide and 1.5  
2   grams per vehicle mile of hydrocarbons,” and in the follow-  
3   ing sentence strike out “1977” and insert in lieu thereof  
4   “1982”.

5       (2) In section 202 (b) (1) (B) (42 U.S.C. 1857f-1  
6   (b) (1) (B) ) in the second sentence strike out “model year  
7   1977” and insert in lieu thereof “model years 1977 through  
8   1981” and strike out “2.0 grams” and insert in lieu thereof  
9   “3.1 grams”, and in the third sentence strike out “1978”  
10   and insert in lieu thereof “1982”.

94TH CONGRESS  
1ST SESSION

# S. 2214

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## IN THE SENATE OF THE UNITED STATES

JULY 29, 1975

Mr. BAKER (for himself and Mr. RANDOLPH) (by request) introduced the following bill; which was read twice and referred to the Committee on Public Works

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## A BILL

To amend the Clean Air Act to continue 1975-76 Federal automobile emission standards through the 1981 model year to permit a balance among the important objectives of improving air quality, protecting public health and safety, and avoiding unnecessary increases in consumer costs for automobiles, decreases in gasoline mileage, and increases in the Nation's dependence on imported oil.

1 *Be it enacted by the Senate and House of Representa-*  
2 *tives of the United States of America in Congress assembled,*

3 SEC. 2. The Clean Air Act, as amended, is amended  
4 as follows:

5 (a) Section 202 (b) (1) (A) is amended to delete  
6 therefrom "1977" and insert in lieu thereof "1982".

1 (b) Section 202 (b) (1) (A) is further amended to  
2 delete the last sentence therefrom and insert the following  
3 sentence in lieu thereof: "The regulations under subsection  
4 (a) applicable to emissions of carbon monoxide and hydro-  
5 carbons from light-duty vehicles and engines manufactured  
6 during model years 1975 through 1981, inclusive, shall con-  
7 tain standards which are identical to the interim standards  
8 which were prescribed (as of December 1, 1973) under  
9 paragraph (5) (A) of this subsection for light-duty vehi-  
10 cles and engines manufactured during model year 1975."

11 (c) Section 202 (b) (1) (B) is amended to read as  
12 follows: "The regulations under subsection (a) applicable  
13 to emission of oxides of nitrogen from light-duty vehicles  
14 and engines manufactured during model years 1975 through  
15 1981 inclusive shall contain standards which are identical  
16 to the standards prescribed (as of December 1, 1973) under  
17 subsection (a) for light-duty vehicles and engines manu-  
18 factured during model year 1975. The regulations under  
19 subsection (a) applicable to oxides of nitrogen from light-  
20 duty vehicles and engines manufactured during or after  
21 model year 1982 shall be established at such level as the  
22 Administrator determines is appropriate considering air  
23 quality, energy efficiency, availability of technology, cost,  
24 and other relevant factors. The Administrator shall publish  
25 for public comment no later than July 1, 1977, proposed

1 standards for 1982 model year light-duty vehicles and  
2 engines and his tentative conclusions with respect to the  
3 matters he is required to consider under this paragraph and  
4 shall publish his final standards and his findings no later  
5 than July 1, 1978. Such standards may be revised after  
6 appropriate notice following such date based upon sub-  
7 stantial changes in any of the factors the Administrator  
8 is required to consider under this paragraph.”.

## SENATE DEBATE ON S. 3219, JULY 26, 1976

### CLEAN AIR AMENDMENTS OF 1976

Mr. MANSFIELD. I ask unanimous consent that the Senate now proceed to the consideration of Calendar No. 685, S. 3219, that it be laid before the Senate and made the pending business.

The legislative clerk read of follows:

A bill (S. 3219) to amend the Clean Air Act, as amended.

Mr. RANDOLPH. It has been more than 10 years since passage by Congress of the first major National Air Pollution Control Act. During that period, substantial progress has been made in reducing the emissions from our highly industrialized and growing society that were threatening the general health and welfare of the American people.

Improving the natural environment has been difficult because of our long history of paying little attention to the undesirable consequences of expansion. We were, in effect, starting from a very low base.

Since we were entering a virtually new field, environmental protection has required a substantial rethinking of attitudes and approaches on the part of many Americans.

We were also in an era in which new technologies needed to be developed and applied if we were to achieve the goals of environmental protection.

I think that largely the benefits have been on the positive side. I believe that Members of Congress and the people generally throughout the Nation think we have done well. Mistakes, of course, are being committed, and errors of judgment are a part of the process. But I feel that the people generally think that we must provide a type of environment in which America can continue as a nation to thrive and to prosper. I believe in a prosperous America; but we also have the problems which sometimes must be considered and should be considered. Is the thriving and the prospering carried out without detriment to the well-being of the citizens of our country? Is there a health hazard? Is there a safety hazard? Are there hazards of other types?

I have been particularly gratified to read in the recent report of the Council on Environmental Quality that the reduction of air pollution was the environmental area in which the most substantial progress was made during 1975.

We bring to the Senate today proposed legislation, the Clean Air Amendments of 1976 (S. 3219), which we feel are appropriate and timely.

This is, the third generation action in this field. It follows on the 1967 and the 1970 acts, and I think that it is correct to say that this bill reflects the coming of age of the air pollution program.

We have now had several years of experience with existing law and, as with any Government program, there is a need to periodically review and refine the requirements of law. Conditions change and so we

must modify programs accordingly. So that is what has been taking place in the subcommittee, chaired by the able Senator who is particularly expert in this field, the gentleman from Maine (Mr. Muskie) and all of us who share the joint and mutual responsibility as members of the parent committee.

We have a comprehensive measure before us. It attempts to cope with all aspects of air pollution control and it does address itself to the changes that have been taking place in technology. We also are giving attention, as we should to the economic situation in the United States of America at the present time. Also, we must look very carefully into the energy requirements of our society, not only now but which it may have in the years ahead.

What we have done, I believe, is have this bill drafted and brought to the Senate Chamber on the basis of realism. That does not mean that all of the members of the committee have like views. It requires a substantial effort in our country to further reduce pollution, but it does not make demands that are beyond the capacity of our scientific capability or of our industry in general. I might modify my thinking if a certain amendment were offered on a part of this bill, but that generally is my thinking.

We have had, more than a year in the actual preparation of the measure before us. In the spring of 1975, the Subcommittee on Environmental Pollution, had extensive hearings. We attempted to find what were the achievements since the legislation became law. The Members of that subcommittee examined the structure and the requirements of the existing law and they called upon witnesses who had expertise and knowledge to think in terms of what we should do in the years ahead. The subcommittee members were not hurried in the consideration of this measure and they advanced it slowly but surely through the hearing process and the markup process, and they brought it to the parent, the Committee on Public Works.

Did we take a cursory look at it? No, we did not. We had many, many markup sessions. The Members were diligent in their attendance at these meetings. We wanted an involvement in the legislative process that could only come through the work of the members of the committee.

I believe that it is very important for the Senate to know that the members of the committee and of the subcommittee have given detailed study to this subject matter.

The purposes of this bill are easy to define. It has as its basic goal nothing more complicated than the continuation of progress in eliminating the causes of air pollution with its substantial social and economic costs. Our country has made a conscious and permanent commitment to environmental quality. We must, therefore, periodically reassess our progress and take the next step toward achievement of our goal. The Clean Air Amendments of 1976 is such a step.

There are 23 printed amendments that have been introduced to the measure as it comes from the committee. I have made it a policy always, when we vote in the committee to advance the bill to the Senate itself, we do it with the understanding that the members individually reserve the right to offer amendments.

Pollution is not a static problem. Pollution is not something that attaches itself to one portion of the body politic or to one segment of the industrial or economic or social life within our country.

This, I think, is a national problem, but it does not mean that the problem is the same in all parts of our country and that the solutions therefore must necessarily be the same if the problems are to be solved.

I hope we shall always in this country realize the importance of the individual.

Within this body oftentimes there is a point on which we can agree, and out of the welter of discussion and differences we can realize that sometimes we have been creating strengths because viewpoints have been expressed and then we can make the decisions.

I think we must work our way, and that is what we have to do especially when we are moving into new fields caused by the concentration of populations and by the industrial growth which have taken place in our country.

The bill reflects the strongly held belief that air pollution control problems are and should be, insofar as possible the responsibilities of the States.

It would seem to me, and I believe that it is appealing to others, that there be, insofar as possible, the responsibility within the States to cope with many of these problems. We have given to the States a very secondary position, and that should not be in connection with this type of legislation or other bills that deal with pollution control.

I think the States are best suited generally, to assess the local needs and conditions and to more effectively enforce the controls necessary.

This bill then, provides increased authority to the States to develop the implementation plans and to carry out these plans. [Sec. 110]

I do stress that there is substantial flexibility, and the States are given latitude in devising their own approaches to air pollution control within the framework of broad goals.

I do not hesitate to say that at the present time we are faced with a very considerable problem in the central part of West Virginia. The State of West Virginia has established more stringent requirements than those which, through the Environmental Protection Agency, are considered as adequate and will permit the consumption of certain types of West Virginia coal in one of our electric generating plants.

Here are jobs involved that will be lost if the State regulations continue to be tighter than the Federal regulations. But no matter what the situation is in one area or one State, I go back to the feeling that we must, as a Federal Government, give the responsibility where possible to the States in connection with the framework of the broad and national goals which have been set for us.

The committee members, I believe, think the most effective air pollution control programs we have are actually the State's responsibility. This is not to say, that there is no Federal role in this activity, but the Federal involvement must be supportive rather than separate, with the authority to help States resolve their problems and mediate their disputes.

Mr. WILLIAM L. SCOTT. I have looked at page 3 of the report of the committee and, reading toward the bottom portion of the page, it indicates:

The Administrator's role is one of monitoring State actions. States have authority to issue construction permits to new major emitting facilities in clean air areas.

This is exactly what the distinguished chairman of the committee has been saying. But if you read further it says:

The Administrator thus could go to court to stop a permit for activities which would exceed the increments of pollution or which otherwise did not comply with the requirements of this section, including of best available control technology. But the Administrator could not and should not attempt to burden this section with unnecessary regulations and guidelines.

The phrase comes to mind, a velvet glove and an iron fist.

That still will have the Environmental Protection Agency compelling the States to do what the Administrator of the Environmental Protection Agency wants them to do.

If we skip a paragraph and read down, it says:

The Committee has also asserted a Federal interest in protecting air quality over certain areas of Federal ownership, by a separate test. The potential activity outside those Federal lands—such as national parks and wilderness areas and international parks—could be prohibited if it would impair the air quality values associated with those Federal lands.

The valley of Virginia is adjacent to parkland, the Shenandoah Park, and the forest lands in the hills. Under the bill, as reported, the air in the Shenandoah National Park must be kept as pure as nature made it. The bill uses the phrase, pristine air quality.

But are we going to be able to build any factories in the valley of Virginia because smoke or other pollution might pass over the parkland or other pollution might come over there, to interfere with this pristine air condition?

That would mean no growth in the valley of Virginia. I do not believe the distinguished Senator, the chairman of the committee, would want that to happen. Yet I am afraid under this bill that this is exactly what would happen.

Frankly, when we talk about wilderness areas or national parks, this is something we all enjoy visiting, but we cannot even visit them unless we get in our automobile to go to visit them.

I have an amendment to offer at the proper time; I just cannot see that the impact of this bill is turning decisions over to the States.

If we cannot use the land in the valley of Virginia for industrial purposes is that a taking for which compensation must be paid under the Constitution?

Shakespeare said, you take my property when you take my right to use it. I wonder if it is a taking of property when we limit the right to use and say that we cannot build in the valley of Virginia.

I have an editorial from the Richmond Times Dispatch that says, "Man shall not live by clean air alone."

He needs bread. He needs clothing. We need a healthy economy. I wonder if this is not going to severely damage our economy.

Mr. RANDOLPH. I understand the concern of my colleague. He has expressed this to me personally on many occasions.

The Senator from West Virginia is here saying what he believes. The Senator from West Virginia must reinforce what he said earlier today that this is a bill brought to the Senate by the action of the committee. I look upon each and every member of that committee as well able to do exactly what he wants to do in reference to this legislation.

I did indicate that there had been exhaustive hearings. We worked for more than a year on this bill. The markups within the subcommittee

and the continuing markups within the full committee were not routine. There was a very spirited discussion of the point that the Senator brings to our attention.

We do not say they cannot build something on a plot of ground.

I do not find in any part of this bill, where that was implied, or we felt it was implied. It is not here.

As the Senator indicated with certain quotations on page 3 of the report, these are matters on which there are different interpretations.

But I say, basically, that what we are doing is to give to the States their responsibilities in a greater degree than they have had them in the past.

In West Virginia now we have stricter air pollution control than at the Federal level. I use the word "apparently." It is going to mean the loss of employment for certain numbers of coal miners.

Mr. WILLIAM L. SCOTT. Is that a statewide law?

Mr. RANDOLPH. It is State. Our air pollution control board has put in stricter regulations as to the use of certain types of coal to be burned in electric generating plants in the State of West Virginia.

At the present time, there is no difficulty with the Federal law in reference to this matter. The coal was being burned. But under the State program now, the coal, as of a certain date, will not be able to be burned.

So we must always realize, that what may be a weakening of a Federal law in some State, may call for a strengthening, or a stronger law in another State.

So we have always got that give and take which I think we have to consider.

Mr. WILLIAM L. SCOTT. I would be in agreement with the Senator, even though I have a nondegradation proposal to offer, and it would preserve the right of the State to a higher air quality standard.

I think this is an extremely important matter because we are deciding about matters that may transcend clean air.

Mr. RANDOLPH. That is right.

Mr. WILLIAM L. SCOTT. We are talking about the economy and a number of other matters.

Mr. RANDOLPH. There were problems that had arisen. An energy problem that was not apparent at an earlier period in connection with the development of the controls. Certainly, the economic problems.

We have a problem in transportation that we never had before in the volume of the transportation that moves over our highways and the type of vehicles that may be moving those products from farm and factory to the ultimate consumer. There are many facets, as the Senator properly has indicated, to this matter.

Mr. McCURE. I think there is one thing that might be added to put into context the colloquy which has just taken place between the distinguished Senator from West Virginia and the distinguished Senator from Virginia. That is with regard to what has become comparative standards, what has become more strict than something else, or less so.

I think we have a tendency to look at State standards or these proposed amendments in the context of somebody's understanding of the original legislation, rather than the understanding of the legislation as interpreted by the court decision on the nondegradation decision.

Once we set the court decision and the EPA regulation pursuant to the nondegradation decision alongside this bill, or some varying State standard, we get quite a different comparison.

The Senator from West Virginia (Mr. Randolph) referred to the action taken by his State in setting standards more strict than the Federal law. I suspect they are not more strict than the nondegradation standard as interpreted by the court. That is one of the reasons we are here with this legislation, to further define what the Congress thinks the law should be rather than leaving it to the Federal court and the regulatory agencies to determine what that strictness shall be.

I think both the Senator from Virginia and the Senator from West Virginia would agree with me that that is the comparison that ought to be made rather than against the original legislation and what may have been the intention of Congress, or at least in the minds of some in Congress, at the time the original bill was passed.

Mr. WILLIAM L. SCOTT. I do not believe there is anything in the 1970 act that refers to nondegradation. It is the decisions of the Sierra Club against Ruckelshaus that concerns us.

Mr. McCLURE. The legislation referred to the original finding that it was our intention to protect. The court in construing that language came up with the interpretation of that language to mean nondegradation. It is against that standard by which we must now judge our act.

Mr. WILLIAM L. SCOTT. The amendment I propose to offer recites the very phrase that the Senator has just mentioned, but then adds, but in no case shall the Federal Government require it be higher than the primary and secondary standards established by the Administrator of the Environmental Protection Agency. The States have the right, however, to require higher standards, and they should have under the police powers.

Mr. McCLURE. When the Senator is referring to the Federal standards, he is referring not to what is being established pursuant to the court decisions but the primary and secondary standards established in the legislation passed by Congress.

Mr. WILLIAM L. SCOTT. The Senator is correct.

Mr. McCLURE. I think that is important. I think there is a great deal of confusion abroad in the land about just what does this legislation that we are considering do, and how it compares to the alternative of doing nothing. That is one of the criticisms I have to the amendment to be offered by the Senator from Utah, which will strike the language that we have in this bill and which would leave us under existing law as interpreted by the court and as applied by the EPA under that court decision.

Mr. WILLIAM L. SCOTT. If and when the distinguished Senator from Utah offers his amendment, I have an amendment to that amendment which, in effect, says during the period of existence of the commission, we shall not have this nondegradation provision as established by the courts. I think it is worthy of consideration by the Senate.

Mr. McCLURE. I understand the Senator has that amendment as well as the other one which he has been discussing. It is a matter we have discussed intermittently over the last several weeks.

Mr. RANDOLPH. I appreciate very much the opportunities for Members other than myself, committee members and Members of the Senate, to discuss these matters. We must be very careful within the Senate not to attempt to move this bill beyond the opportunity for Members to check it out very carefully, to offer amendments, and participate in the debate when they desire.

I repeat, that pollution control is extremely complex. The implications of the program are such that I say to the Senator from Virginia (Mr. William L. Scott) and all in the Chamber that we must carefully examine each step that we take so far as possible. We want to be certain that we are moving in a purposeful direction, I will call it the right direction, not only to achieve clean air, but to do it in a manner that does not disrupt the many, many necessary aspects of our personal national life.

The bill also recognizes the responsibility of local governments for many of the programs with direct impact on improving air quality. In particular, transportation systems are a concern of local governments, and the bill provides that transportation control plans will be prepared by organizations of local elected officials, and the provisions of such plans must be implemented by local governments. [Sec. 174]

This bill will redress a major flaw in the way transportation controls were developed under the 1970 act. Local governments were not accorded their proper role in that process, and the plans developed often were unrealistic, and suffered from a lack of local support. The amendments require that plans be developed in the first instance by local officials.

For many years I have been concerned with the long-range energy needs of our country and how they might be met. The energy crisis that erupted in the winter of 1973-74 was one manifestation of the problems we must resolve. It was a painful reminder that we need to be making more progress toward determining how our energy will be supplied in the future without disrupting the economy.

As a Senator representing one of our country's largest coal-producing States, I also am aware that coal must play an increasingly central role in providing energy to run our country, particularly in the years immediately ahead. The exotic potential sources of energy are by general agreement many years from widespread application. We know that we should not depend on foreign sources of fuels, particularly petroleum, but we have made little headway in reducing that reliance. At the present time, the United States imports more than 7 million barrels of oil from other countries every day. In some weeks imports are one-half our national supply and it results in the outflow of billions of dollars to other countries.

Our country has vast reserves of coal and we have the technology and the ability to produce this coal and move it to markets. We also know how to use it in environmentally safe ways. Two years ago the Energy Supply and Environmental Coordination Act was passed with provisions for electric utilities and other industrial facilities to switch to coal from oil and natural gas. The Clean Air Amendments of 1976 also address this subject and adjusts the program to facilitate the conversion to coal. [Sec. 113(d)]

There are two basic coal conversion issues dealt with in this legislation. The first extends the date for sources which convert to coal to

comply with pollution abatement requirements. The second transfers to the States some of the responsibilities in this area presently held by the Administrator of the Environmental Protection Agency. While I believe strongly that coal is essential to meeting our country's energy needs, it must be utilized in environmentally sound ways. We can do this through the provisions of the bill which will enable industrial sources, particularly electric utilities, to continue converting their boilers to coal.

There was perhaps no more difficult issue for the committee members to resolve than how to implement the policy for protecting existing clean areas from contamination by air pollution. Throughout this country there are large areas that have clean air. We know how difficult it can be to remove pollution from dirty areas, so it is essential that we do not permit deterioration of air quality in those areas which are relatively pollution free. Any costs that might be associated with such an effort should be more than offset by avoiding costly corrections in the future. [Sec. 160-169]

Prior to the past year, the question of exactly what constitutes significant deterioration had not been directly addressed by the Congress. This issue arose because of judicial interpretations and administrative actions based on earlier legislation. The committee felt, however, that once the questions had been raised they should be answered by the Congress. We were, in fact, urged by many industry representatives to act in this area.

The members of the committee deliberated for many weeks on this issue. Input was received from many outside sources, including governmental, industry, and organizations. We considered a number of approaches to the problem and I believe that our final decision is one that is both balanced and effective. Section 6 of the clean air amendments establishes procedures under which no significant deterioration of air quality will be permitted in areas which are clean at the present time.

Once again, the States are asked to assume substantial responsibility for the implementation of this section. The provisions of section 6 are basically simple: the development of pollution sources will be carefully controlled in or near areas that are adjudged to be clean. The same controls will apply to certain federally owned lands where there is a special need for clean air.

There is considerable misunderstanding about the provisions relating to nondeterioration and about their potential impact on industrial and commercial activities in our country. This situation is apparent in the mail received by the committee and I believe that we should take time to separate some of the facts from the fiction.

First, this is not a Federal land use measure in disguise. Obviously, if pollution sources are to be restricted, there are some land use implications of section 6, but they are not objectives of the legislation. Since the States have the basic responsibility for developing and implementing nondeterioration plans, there is little Federal involvement.

Another complaint is that nondeterioration provisions would virtually halt industrial development in this country. Any rational examination of the bill shows that this is clearly not the case. The members of the committee, in fact, were careful to include in this section a mechanism for permitting industrial development in clean air areas.

Such development cannot take place without stringent controls if the integrity of the air quality is to be maintained, but the bill does establish guides under which there can be industrial and commercial activity. As a practical matter, there is really no limit on what can be done in class II areas under the bill. A given facility may have to install better controls, or be resited, but it almost certainly can be built in compliance with the increments. The use of the best available control technology is required so that emissions are kept to an absolute minimum thus providing more capacity for industrial activity. Furthermore, the nondeterioration provisions of the bill require that consideration be given to the energy, environmental, and economic consequences of any proposed level of control and technology requirements.

Finally, the nondeterioration section of this bill applies only to new major sources of emissions. It does not relate to sources already in existence. They are covered by other sections of the act.

This area was not an easy one to resolve. The time and concern devoted to it by the members indicates how seriously they viewed this matter. The nondeterioration section has benefited from such intensity of examination. Its requirements are not excessive nor are they overly restrictive. They will be extremely helpful, if not essential, in achieving the goals of clean air that we have established for our country.

Another difficult issue in this bill is that relating to emissions standards for automobiles. Under the provisions of the Clean Air Amendments of 1970, the 1975 model year was set as the deadline for making cars that were essentially free of pollution. The Congress and the Environmental Protection Agency subsequently extended the deadlines. This bill further modifies the schedule for achieving the ultimate statutory emissions standards. It also revises one of those standards. On the basis of new scientific information, the committee recommends that the final standard for oxides of nitrogen be placed at 1 gram per mile rather than four-tenths of a gram per mile as in existing law. [Sec. 202(b)(1)(B)]

The control of pollutants from automobile exhausts is central to the general reduction of air pollution. Motor vehicles produce a significant portion of the total emissions in the air and particularly in urban areas. In some cities, such as Washington, D.C., automobiles are the largest source of pollution.

This is one area in which a national view has been taken. Automobiles are manufactured and sold on a national basis and they move readily from point to point within the country. It would therefore be difficult, if not impossible, to adopt a State-by-State approach to control automobile emissions. In developing this section of the Clean Air Amendments of 1976, the committee was cognizant of the level of technology development both with respect to emission control and to engine efficiency. The extension of compliance deadlines in the bill will provide opportunities for the industry to make further progress developing technologies that will both enhance fuel efficiency and further reduce emissions. The members continue to believe, however, that strict timetables and adherence to them will be a stimulus to industry to further its efforts in both of these fields.

The emission control systems presently used on cars will not be effective for a long period of time unless maintained properly. Just as engines will not run without periodic attention, neither will these pollution control systems last forever without care.

The law requires that warranties for emission control systems be provided by manufacturers be valid for 5 years or 50,000 miles, whichever occurs first. Considerable concern has been raised that such a lengthy warranty period for performance would have severe economic consequences on the independent parts and service industries. It is believed that the long-term warranty may limit service and parts to those provided by manufacturers of automobiles.

The committee was sensitive to this problem and, as a result, included several provisions in this bill intended to protect the economic integrity of these independent businesses. Under this bill, automobile manufacturers, for instance cannot require the use of their own parts or service provided by their agents as a condition of maintaining the warranty in force. Further, independently manufactured parts can be certified as usable without affecting the validity of the warranty. Finally, and as further protection and guidance for future action, the Federal Trade Commission is directed to conduct a study of any anti-competitive effects that may still exist with respect to warranty requirements for emission control systems.

There are many thousands of independent businesses throughout our country that depend on servicing of automobiles. It is apparent that they would be endangered by any requirement of Federal law which limited their ability to perform regular maintenance work on automobiles. The committee has properly addressed this subject and I believe that the result will be protective of independent industry while maintaining the integrity of the pollution control program. [Sec. 207]

When the committee was debating this subject, I supported a proposal to reduce the warranty period to 18 months or 18,000 miles. That amendment was not adopted and the provisions that I have just discussed were subsequently included in the bill. This modification, together with the amendment being proposed by Senators Baker, Buckley, and Stafford, will be sufficient to avoid discrimination against the after-market industry.

Closely related to the reduction of emissions from automobiles are transportation control plans as a technique for reducing pollutants in communities. Existing law requires the use of transportation control plans as part of an overall strategy in urban areas. This bill modifies the transportation control plan requirements somewhat by authorizing an extension of time for their implementation. [e.g. Sec. 110(b)(2), (5)]

States may apply for and receive an extension for up to 5 years for the attainment of primary ambient air quality standards in areas requiring transportation controls. These States must show that the earlier imposition of such controls would have serious adverse social and economic effects. The Environmental Protection Agency can grant the extensions if the State shows that it is working toward the attainment of primary air quality standards. The bill also provides for a second extension up to May 31, 1987, if primary standards are incapable of attainment through the use of all reasonable and available control measures. This extension would be limited to a few of the very worst pollution-affected metropolitan areas.

I must observe at this point that the basic objective of the act is to be attained by reaching specified air quality standards in designated control regions. The use of transportation control plans and auto-

mobile emission standards are among the various techniques for the attainment of overall air quality standards. I can understand many communities feel that transportation control plans are unnecessarily severe and would impose severe hardships on normal life. We must remember, however, that lengthy delays in meeting automobile emissions standards increases the possibility that transportation controls will have to be imposed if air quality standards are to be met.

Stringent transportation controls, therefore, can perhaps best be avoided by concentrating on the technologies for reducing the pollutants from the automobiles themselves.

The committee also gave careful consideration to the problems of industrial development in urban areas where air quality standards have not been reached and are not likely to be attained for some time. These are often the areas where industrial expansion is likely to take place and under existing law it is severely restricted and sometimes impossible.

To cope with this situation and thus avoid imposing a strain on our economic system, the bill contains provisions allowing under certain conditions expansion and modification of facilities in substandard air quality areas. We were careful, however, to avoid permitting indefinite failure to meet air quality standards. It is for this reason that expansion will be permitted only under very carefully drawn conditions which assure first, that air quality will not further deteriorate and, second, that continued progress will be made toward removing pollutants from the air. The bill recognizes that concentrated urban areas are the most likely candidates for industrial growth and also that some heavy industries simply are not suited to operation in rural or lightly populated areas. [Sec. 171]

The committee also recognized the particular problems of the smelting industry in complying with pollution reduction requirements. The basic approach of the air pollution control program has been that continuous controls were the most effective technique. It appears, however, that in the smelting industry there are instances when supplemental controls are acceptable or a temporary solution to avoid massive expenditures in an industry having difficulty competing with foreign suppliers. The bill provides, therefore, that enforceable supplemental controls can be included in an implementation plan for existing non-ferrous smelters for such metals as copper, zinc, gold, silver, and lead. [Sec. 119]

There is no question that air pollution control is an extremely complex undertaking. It is also a new venture in this country on the scale on which we have embarked in the past decade. The implications of such a program are such that we should carefully examine each step that we take and be sure that we are moving in the right direction, not only to achieve clean air but to do so in a manner that does not disrupt other aspects of our national life.

The Federal Water Pollution Control Act of 1972 authorized the establishment of a Commission to review that program and to suggest future courses of action.

Now, we take the same approach, and I will say to the Senator from Tennessee (Mr. Baker) that what we did in connection with the National Commission on Water Quality we are now doing in this bill, under his direct sponsorship of an amendment in the full committee

calling for a National Commission on Air Quality. It is necessary to have this continuing study, this careful review and assessment of all of the problems, not only of pollution control but of the social and economic considerations or aspects which are involved.

Mr. BAKER. I am grateful that our distinguished chairman has referred to that provision of the bill covering the National Commission on Air Quality. I am hopeful that it will add an element of strength in a difficult and uncertain field.

The legislative commission is a good approach to congressional oversight and I hope our colleagues will think of it as a technique which does what we have not always done readily; that is, admit that we do not have final definitive answers to every problem, but also as a technique for giving a freshness of viewpoint for legislation from outside the executive and legislative branches.

Mr. RANDOLPH. The Board would be composed of 15 members, public and congressional, and that body would be charged, as we were in the study under the National Commission on Water Quality, with reviewing the adequacy, the fairness, and the effectiveness of the clean air program, to protect the public health and welfare, and, of course, the implications of the program.

A report would be required to come to Congress within 3 years. It is likely that we will be called on to address the clean air program in that period, and the detailed examinations of the Commission, would be a valuable guide in charting the future course of the program.

Mr. BECKLEY. The chairman of the Public Works Committee, the Senator from West Virginia (Mr. Randolph), has, I believe, given us an excellent survey of the problems that have been confronted by the committee and the objectives that it has sought to achieve during the long process of examining various proposals and specific amendments that have been offered to bring the legislation, first enacted in 1970 up to date. We have met problems that could not have been anticipated at that time. This bill adjusts the timetables. And the bill does many other things that are necessary to update such fundamental legislation.

I am in full support of S. 3219, the Clean Air Act amendments of 1976. I am convinced that it is sound legislation. I am convinced that it is necessary legislation. And I am convinced that it is legislation that is both fair and equitable.

The Senator from Idaho (Mr. McClure) made an extraordinary contribution to the quality of the report by insisting that the members consider it sentence by sentence, to make sure that its language fully reflected the committee's intention as to the effects of the various provisions. I believe this report is particularly authoritative insofar as it reflects the thinking of the committee.

I would like at this time to offer some thoughts and observations on the philosophy of this legislation.

Many persons have argued that we need no bill at all, except for one that extends the deadline for attainment of the auto emission standards. But the committee chose, wisely, I believe, when it decided to resolve such thorny issues as that of significant deterioration in clean air areas.

Despite its length and scope, the 1970 clean air amendments failed to delineate many aspects of a national clean-air strategy. The law

failed to detail such directives as the requirements carried over from the 1967 act to "protect and enhance" the Nation's air quality. The courts have been called on to interpret this directive, as well as the one for "transportation controls," which, while upholding the thrust in the 1970 act, nevertheless did so in a manner that has allowed less latitude for judgments in individual cases than the Congress may have intended. The Environmental Protection Agency has followed these decisions with administrative rules that have implemented the courts' decisions. Failure to adopt language in this bill involving significant deterioration will leave those regulations in place for the foreseeable future, substituting the substantive judgments of the courts and EPA for explicit directions from the Congress.

The Constitution vests the Congress with the responsibility to define national policy. It would be an act of irresponsibility for the Congress now to leave the resolution of these issues to the agencies and the courts. And it would be an act of folly, for it would assure that corporate decisions on growth would remain tied to litigation for months and years to come.

In the committee's language defining "significant deterioration," we have established a flexible and reasonable standard against which to measure the deterioration of air quality in clean air areas. Significant deterioration is defined in terms of concentrations of additional ambient pollution. It is not a new approach or a new philosophy. This bill achieves this goal by relying on the judgment of the States, and not the Federal bureaucrats, as is now the case. This is a wise and practical change.

"No significant deterioration" is a policy that has no effect on existing sources, unless a source undertakes a major expansion program. It requires the States to study the impact on air quality resulting from the siting of new major sources of pollution, and it creates a mechanism allowing a State to decide if it wants the next major source to consume all the clean air resources of an area, or whether that clean-air resource should be shared among various new plants. It lessens the danger that an upwind State will impose its pollution on a neighbor.

Fundamental to this approach is the requirement for the use of "best available technology," to be determined by each State on a case-by-case basis. What would be the effect of requiring less than best-available technology? The main danger would be that the initial applicant in the clean-air area would use up the entire allowable increment of pollution, whether that increment is the one specified in the bill or is the difference between the present level of air quality and the secondary standards. The more lax the initial emission standard, the more likely it is that the plant will some day be forced into costly retrofitting in order to shoehorn new facilities into the area. With a requirement for best available control technology, there is less need to worry about modeling errors. And there is less likelihood that development plans will be tied up in court over questions of whose modeling is right.

Inherent in the word available is a judgment on the costs and the energy use, plus other implications of that technology. Specifically, the Senate bill requires that "energy, environmental, and economic impacts and other costs" be taken into account by each State in this test. This is a decision that should and will be made by the local officials, the people best able to make that balancing judgment.

This bill does not impose land-use designations or giant clean-air buffer zones, as present EPA regulations do. When Congress in the 1960's established ambient air quality standards as the criteria for measuring air pollution, Congress required then that States and the Federal Government work together to analyze the impact of a new plant on the air quality in the area of the plant. Section 6 of this bill defines that directive with greater precision.

Another issue that carries vast significance relates to the automobile standards. Public interest centers on this provision as much as any other in the bill. We have reached a decision that I consider to be fair. It is one that will impose no undue costs—in terms of dollars or fuel economy—on the motoring public. The standards in the bill are reasonable and offer the industry the time it needs to meet the statutory standards.

Not only does this bill establish a staged approach toward more stringent standards, but it also sets the nitrogen oxide standard at a more realistic, permanent level: a level of control that will assure essentially healthy air when matched by controls of similar stringency on stationary sources. Probably most important of all, the bill creates a mechanism that allows the industry to phase-in its cleaner cars, without pushing the industry into full compliance in the leap of a single model year.

The date for full compliance in this act—1980—represents a 6-year moratorium from the initial compliance date on hydrocarbons and carbon monoxide set in the 1970 act. EPA has determined that those statutory numbers could have been met in the 1976 model year. The hydrocarbon number will be met this fall in the cars that are sold in California.

I must note that some cars in 1976 were certified at levels that matched or came close to the numbers for 1980 in this bill. The 1977 Volvo line easily met the statutory standards with innovative catalyst technology. This does not mean that everyone can do it with ease, but I do believe that it indicates that the new standards established in this bill are not unreasonable.

The date on nitrogen oxides represents a 4-year extension from the 1970 act, as well as a relaxation allowing pollution at  $2\frac{1}{2}$  times the level set in 1970. This standard was selected in part because of the need to assure the broadest possible options in the industry, including use of diesels, stratified charge engines, and the so-called lean-burn system.

One of the more difficult problems was developing a rational step toward ultimate automotive controls. The industry told us that it has historically developed on a pattern that involved the gradual phasing in of new technologies from automatic transmissions to radio aerials embedded in the windshields. They were available initially on a few models, then expanding to the full line.

Such a phase-in approach was the basis for the original Muskie-Buckley proposal of more than 1 year ago that sought to relate the phase-in to auto mileage. When the industry attacked that proposal, the committee evaluated a variety of alternatives: a phase-in based on weight, one based on styling changes, one based on an emissions change. All had drawbacks of one kind or another. The committee then reached its present proposal, tied to a relatively small percentage that can be

achieved in the insulated California market or based on one or two models. With the exception of the smallest companies, the manufacturers are required to sell 10 percent of their 1979 cars at the 1980 numbers. This can be done in any way the company chooses.

This phase-in scheme is designed to encourage innovation. I am convinced that the industry is capable of achieving the standards in this bill, in the time allotted. The time is not just in the future. The industry has known since 1970 what was ultimately required. It has known since last fall what numbers would be contained in this bill. I would anticipate that the industry has been—or at least should have been—working toward the achievement of these goals. The numbers in the bill are reasonable ones. Frank Zarb, Administrator of the Federal Energy Administration, wrote to the subcommittee a year ago as follows:

Theoretically it is possible to meet the lower standards of .41 HC/3.4 CO 1.0 NO<sub>x</sub> without fuel economy loss using three-ways catalysts or advanced oxidation catalyst systems with cold-start HC storage or with start catalysts. In practical terms, however, relatively few cars could be equipped with such advanced systems by the 1978 model year, and thus there would be fuel economy losses that will vary directly with vehicle weight.

This bill meets that criticism. It does not bring in the lower standard until 1979, and provides until 1980 for full compliance. Mr. Zarb also said:

The 1.0 NO<sub>x</sub> standard would be achievable with lean burn and with stratified charge engines without fuel economy loss in the lighter vehicles, but would entail fuel economy loss in larger automobiles. None of these alternate engines, however, could reasonably be developed for production by the industry unless the industry had assurance that the ultimate emissions standards would not be lower than 1.0 NO<sub>x</sub>; at lower NO<sub>x</sub> levels a reduction catalyst or three-way catalyst would be needed, and such catalysts cannot be used with lean burn or stratified charge engines.

A number of other provisions have been included in the bill as a result of amendments that I offered in committee. I would like to discuss several of these at this time.

Much of the impetus for this bill involves a recognition that control technology needs to be improved. This fact is noted in the general statement of the report, which demonstrates the importance our committee places on improvement of technology for pollution control, encouraging better, cheaper controls now and lessening the need for retrofitting in the future.

Most significant, at least initially, is the provision involving the technology waiver. This language appears in the section that extends compliance deadlines for stationary sources. My provision would allow 2 additional years for compliance by any company that can demonstrate that it plans to use that time to develop and install a new and innovative technology that would either sharply reduce costs or provide greater pollution control, and offer techniques that could be adopted widely. [Sec. 111. Sec. 110(c)(4)]

In acting upon a request for additional time under this innovative technology provision, the State authority may grant an extension under either the provision requiring a bond or the one involving a delayed compliance penalty. A bond would be required for a source intending to replace its entire production process and which could not comply by gradually phasing in on a timetable for compliance. The

delayed compliance penalty mechanism would be applicable when the source would meet the emission limitation by modifying or replacing pollution abatement equipment or which could meet the phase-in requirements on a schedule for compliance.

Another provision designed to stimulate technology is section 40, which requires that the Administrator of EPA study ways an emissions tax could encourage the control of emissions of oxides of nitrogen from stationary sources. [Sec. 405(f)] One of the difficulties of current law is the lack of incentive to new technology. An emissions tax, if implemented fairly, would create a marketplace incentive toward improved emissions controls. If successful, it could also suggest a new approach to the control of pollution that could prove more effective and efficient than what we have thus far adopted.

Earlier in my statement, I discussed the need to prevent the significant deterioration of air quality in clean air areas. [Sec. 160] This requirement, too, should serve to stimulate technology over the longer run. Inherent in any such control program, pegged to ambient pollutant levels, is the realization that there is a maximum level of pollution than can be emitted in any one site. Since there is a natural trend toward economies of scale, such an incremental lid will lead to the need for increased percentages of control as the potential sources of pollution grow larger. The development of such technologies should lead to the use of less costly and more effective controls on existing plants in our cities.

This same philosophy of growth under an umbrella applies to that section of the bill that allows expansion of plants in areas where standards are presently being violated. [Secs. 171-178.] By granting greater flexibility to local authorities—allowing expansion of a steel mill or a chemical plant or petroleum refinery—the bill will encourage industry to develop new approaches and improved technologies.

In considering technology, the State must consider economic and other social factors. But the weight given to those economic factors by any State is wholly discretionary with that State, as is the issuance of any permit under this act. The word "may" is implicit throughout this bill when it details procedures of how the State evaluates best available control technology and the impacts affecting that technology. Each State, of course, retains full flexibility to set as restrictive a standard as it may wish in the interest of preserving air quality and/or encouraging as much industrial expansion as would be practicable within the limitations set by the allowable increments of specified pollutants. This language is not intended to encourage a least common denominator approach. It should, over the longer run, encourage technological flexibility and improvements in technology that are effective from an environmental and economic viewpoint.

There are a number of other provisions that I believe are sound and merit the support of my colleagues. The provisions allowing for reasonable extensions in the deadlines for full implementation of transportation controls, is one such example. While it is recognized that some areas may need years and years to reach the ambient standard, our bill requires that a community impose reasonable controls as quickly as practicable, making staged improvements toward the ambient standards. Several points need to be made relating to transportation controls. The bill contains a list of a number of strategies that are to be studied.

[Sec. 108(e)] It is my expectation that those strategies will be considered reasonable in nearly every case. As part of that strategy, a community must institute the various reasonable transportation controls when they become available. It is unacceptable for a community to wait until the end of the extension period to throw on all of the reasonable strategies at one time. Good sense and the intent of this bill calls for implementing each reasonable control as soon as it is practicable to do so. This is particularly important in those areas that may require a second extension. Before the extension is granted, the community must show that it is doing all that is reasonable up to that point. And then the extension may be granted only on implementing one or a few strategies, with all others requiring during the initial extension.

The bill also provides funds for community planning for transportation controls. These funds are available for public education in transportation controls, as well as for the actual planning itself.

Another provision of interest is section 35. This section is intended to lessen the danger that a private party may be harassed by Federal litigators. This provision will assure that any party in a suit with the United States under this act will receive reimbursement of all costs of litigation should that party prevail. [Sec. 307(f)] While such a provision cannot prevent harassment, it will certainly encourage private parties and municipalities to push for their full rights, as they have every right to do.

Mr. STAFFORD. I would like to add my support for passage of S. 3219, the Clean Air Amendments of 1976.

This legislation was produced under the legitimate pressure of conflicting tides. There were some who argued that no bill was needed, except for a simple extension of the deadlines regarding auto emission standards. Others argued that our committee should produce legislation that would let down the safeguards protecting our environment, because of the economic difficulties facing our Nation.

The committee decided wisely to reject those suggestions.

The bill reflects the least possible changes required to improve certain features of the Clean Air Act in response to changing national conditions.

One of the major achievements of this bill, is the establishment of a flexible and reasonable standard against which to measure significant deterioration of our air.

The standard does not involve landuse designations or massive clean air buffer zones, as many have claimed. The argument that this legislation imposes a new philosophy of Federal land use planning is an inaccurate reading of both this bill and of existing law.

The achievement of this difficult standard is in the highest tradition of this body.

It would be unwise for the Congress to fail to define this national policy, for it would surely guarantee that corporate growth decisions would be snarled in litigation for years to come.

In addition to dealing with the issue of significant deterioration, this bill addresses three other basic aspects of our national effort to keep our air clean: reasonable modifications of auto emission standards; a plan for coordinating stationary source compliance schedules, and a system to move more effectively into transportation control plans in major cities.

The committee reached the conclusion that it would be dangerous to encourage an economic growth policy that abandons environmental safeguards. Our Nation must continue to grow without destroying the very environment that sustains our lives.

Mr. DOMENICI. I would like to offer some prospective comments on several challenges the committee bill faces on the floor of the Senate. The most prominent of these challenges centers on the bill's nondegradation provisions. Enactment of these provisions is essential to both the long range environmental integrity and economy of the State of New Mexico.

Let me elaborate on the apparent paradox contained in his statement. New Mexico has long prided itself on the splendor of its natural setting. Maintaining such splendor remains a high priority for all New Mexicans. Counterbalanced against this desire for preserving environmental quality is the desire of New Mexicans for economic growth. New Mexico ranks 48th in per capita income. Improving the economic well-being of our citizens also ranks as a high priority.

The committee's nondegradation amendment offers a mechanism for reconciling these apparently conflicting priorities. Without a nondegradation policy, New Mexico would be forced to sacrifice its environmental quality when competing with neighboring States for new industry. Alternatively, a decision not to allow environmental quality to be a bargaining chip in its siting negotiations with new industry could come at the expense of an improved standard of living for those mired in poverty, or those lower on the economic scale.

Enactment of the committee's nondegradation policy would eliminate States desiring both growth and environmental quality from having to make such a stark choice. A Federal nondegradation policy puts all States on equal footing in competing for new industry. States are not forced to sacrifice environmental quality for economic growth, but rather can require that new industries employ best available control technologies without fear that a sister State will undercut them by sacrificing environmental restraints.

Nevertheless, despite the importance of nondegradation for States such as New Mexico, several lines of attack have surfaced against the committee provisions that deserve comment.

#### (1) MORE STUDY IS NEEDED BEFORE ENACTING A NONDEGRADATION PROVISION

This is an alluring proposition. It is difficult to be against additional studies. There comes a time, however, when the Nation has a right to expect congressional action. The argument for more study ignores the fact that the Environmental Protection Agency already has regulations on this issue in effect that are the subject of continued litigation and confusion and that industry, environmentalists, and the executive branch have made repeated entreaties for Congress to resolve this issue. The call for more study is little more than a call for continued chaos.

The argument for additional study also deserves several technical comments. First, I remain skeptical that an effort of the magnitude contemplated by the study proponents could be completed in a year. The analogous National Commission on Water Quality took 3 years to complete its work, and was 6 months late in making its final report.

Second, study proponents point to difficulties in the art of air quality diffusion modeling as an argument for the study. I view the matter differently. One of the weaknesses of many of the present studies on the nondegradation issue is that they are based on hypotheticals that employ a wide variety of air quality diffusions modeling assumptions. The chance for both sides to embed hidden biases beneath mounds of data has led me to the conclusion that we have reached the point of diminishing returns with respect to the probative value of additional studies based on hypotheticals. What we need is real world experience that can serve as feedback for future amendments. The committee amendments provide for a National Air Quality Commission to provide such feedback. Diverting the commission from its job of providing the Congress with hard data on the real world consequences of nondegradation for a 1-year study based on fictional hypotheticals appears to me to be ill-advised.

## (2) NONDEGRADATION WILL PROHIBIT FUTURE GROWTH

This argument has been repeatedly demolished. Senator Muskie's submittal in the April 29, 1976, Record starting at page S. 6175, contains an insert of a recent EPA study that goes into great detail on the issue of the size of new industrial facilities allowed under the committee's nondegradation provision. The study's principal conclusion is that—

The Senate significant deterioration proposal will not prevent the construction of major, economically sized industrial facilities (April 29, 1976 Cong. Rec., p. S. 6177).

There is, however, one point made in the EPA study concerning future constraints on growth that merits additional discussion. EPA cites the possible need for a class III in the post-1980 period to allow industrial concentrations in urban areas. This is precisely the type of issue the National Air Quality Commission should be focusing its attention on after we get some experience with the committee's nondegradation amendments. One personal observation on the class III issue is that principal methodological technique of doomsayers on both sides is to keep our technological capabilities constant while charting increases in other variables such as energy, population, or pollution. Obviously, keeping technology constant while allowing growth in other variables can always allow one to forecast disaster. Certainly one of the hopes of those of us who support nondegradation is that it will serve to force technology so that the Nation will not have to resort to options such as class III. Nevertheless, one cannot afford to be such a technological optimist as to ignore reality. If the National Air Quality Commission should recommend an option similar to a class III, I, for one, would seriously consider it.

## (3) NONDEGRADATION WILL COST TOO MUCH

Informed opponents of nondegradation, recognizing that well-controlled major facilities will not be precluded, have argued that the policy will cost too much. Again, I believe the EPA data found in the April 29, Congressional Record refutes this contention. In fact, EPA's general conclusions receive support from a recent study commissioned by the utility industry. Generally, both efforts find that the individual

consumer's electrical bill will not be increased through 1990 by more than 2 percent by the Senate's nondegradation amendments. Moreover, capital costs to the industry are in the 3-percent range. Personally, I believe these investments well spent.

For those of us from the West, this issue of costs has an extra dimension. Much of the existing and proposed construction of fossil-fueled electrical energy-producing facilities in the West is for export to California, which has no coal-fired plants of its own. Accordingly, California consumers will be reaping the benefits in terms of electrical energy, while residents of New Mexico and other energy supplier States will be left with the costs imposed by environmental degradation. In light of this discrepancy between those reaping the benefits and those bearing the costs, it appears to me entirely proper that California consumers pay a premium for their electrical energy to protect the environment of New Mexico.

The second challenge to the bill concerns section 16 of the Public Works Committee bill that deals with "Ozone Protection." An amendment (No. 1577) proposed by the Senator from Oregon would have us implement at this time an outright ban on aerosol products to take effect January 1, 1978. Such a position defies the overwhelming weight of testimony and opinion that there is time to gain answers to the complex scientific questions which are bound up in this matter.

The committee bill is a serious attempt responsibly to grapple with the issue of whether fluorocarbon compounds released from aerosol containers—and from refrigeration and air conditioning systems as well—are depleting the ozone layer above the Earth's surface. The committee's bill views the matter as one of grave concern. It gives the Environmental Protection Agency power to take whatever action is needed, when it is needed, if the growing body of scientific knowledge shows that there is a risk to man or the environment.

The approach submitted to us by the distinguished Senator from Oregon is, I respectfully submit, unrealistic, unnecessary, and impractical. It is a poor precedent in environmental regulation and I urge its rejection. It is unrealistic, because it assumes we have answers to questions which we do not have. It is unnecessary, because responsible opinion acknowledges that there is time to obtain the needed answers. And it is impractical if viewed as anything other than an outright ban of aerosols, because it imposes an impossible burden on industry.

My colleague from Oregon has purported to offer a bill which would not be an outright ban on aerosols using fluorocarbons. His remarks of April 7, 1976, however, reflect his recognition of the fact that his bill would be just that. He has spoken of giving industry a period of time to develop alternatives to use of halocarbons in aerosol spray products and of other matters, all pointing to the intent of banning halocarbons from use in aerosols.

The reason the Senator's bill leads to this result is that the ban would take effect unless EPA found that "no significant risk" to the public health was present. Yet, as a basic scientific matter, it is extremely difficult, if not impossible, to prove the negative of the unproven hypothesis that fluorocarbons may rise through the atmosphere, react with the ozone layer, and diminish it, thus increasing the amount of ultraviolet radiation at the Earth's surface.

The approach of requiring that the scientific hypothesis be proved incorrect would constitute a basic deviation from the established mode upon which regulations have traditionally been made in this country and the way in which our system of jurisprudence operates. It should be emphasized that this matter is completely distinguishable from other contexts in which legislation has required an industry to establish that its products are safe or not harmful, such as pesticides and food or color additives. In these other contexts, there are established testing procedures by which an appropriate judgment can be made regarding the safety of the products. These include tests on animals, such as long-term feeding tests with rats and mice, and rabbit skin tests. In contrast here, because the ozone depletion controversy involves a hypothesis based on computer modeling and a variety of untested scientific assumptions, there are no known acceptable techniques or protocols which would permit industry members affirmatively to establish that their products do not deplete ozone within the time frame contemplated by Senator Packwood's proposal. In the final analysis, this is just another way of noting the difficulty, if not the impossibility, of proving the negative of unproven hypothesis.

Given the state of scientific knowledge of the matter, the committee's approach, as now set forth in section 16, is particularly appropriate. It protects the public interest and meets accepted standards of administrative due process. Section 16 now provides that, if research undertaken under the bill shows that the continued use of fluorocarbons "may reasonably be anticipated" to contribute the public health risks, EPA has full authority to take action to eliminate such risks. Another provision of the section permits EPA to act even prior to the completion of the research, if developments warrant such action.

For these reasons, I urge defeat of the amendment offered by my colleague from Oregon. His approach is one which has already been rejected as inappropriate by the full committee and one which should likewise be rejected by us here.

MR. BAKER. The vote to report this bill was 13 to 1. It is difficult to assess the significance of the near unanimity with which the committee acted without understanding the complexity of the issues dealt with and the concern of each committee member for the broad impacts of this legislation.

#### MOBILE SOURCES

It has been the main tenor of these amendments to adjust the goals set by the 1970 act to reflect economic and technology limitations. In the extension and modification of mobile source emission standards, the committee has accomplished its purpose in three ways: First, by changing the statutory standard for oxides of nitrogen to 1.0 gram per mile, the committee has broadened the range of potential technologies which will respond to the requirements of the statutory standards; second, the committee has granted the industry another year to meet statutory standards for HC and CO. This brings to 4 years the total extensions granted industry and reflects the willingness of the committee to track technological progress in the implementation of its goals; and third, the modified statutory standards incorporated in the bill provide a clear goal to industry assuring the orderliness and certainty necessary to an effective technological research effort. [Sec. 202]

We have made great strides toward reducing the pollution burdens in our cities under the 1970 act. While the committee's action will delay further progress slightly the bill contains provisions to insure that these standards are effectively enforced and that ultimate emission standards are consistent with technological progress to date.

#### NO SIGNIFICANT DETERIORATION

Most of the Nation enjoys air quality better than the threshold levels identified in the primary and secondary standards of the Clean Air Act. Without protection industrial development would push many of these areas toward the thresholds for dangerous air.

It clearly was not the intention of the drafters of the Clean Air Act in identifying levels of pollution harmful to man and his environment to make those levels the target or goal for clean air areas of the Nation. While adequate provision for protection of clean air areas was not drafted into the Clean Air Act, the concept has derived from the statement of purposes contained in that act. Section 6 of S. 3219 contains our attempt to provide a precise legislative framework for this fundamental concept. [See Secs. 160-169]

#### HISTORY

The concept of no significant deterioration as a part of clean air strategy derives from the case of *Sierra Club v. Ruckelshaus*, 344 F. Supp. 253 (D.D.C. 1972) on May 30, 1972. The district court in this case declared that the phrase "protect and enhance the quality of the Nation's air resources" contained in section 101(b) of the Clean Air Act intended that all States must include as part of their State implementation plans provisions to prevent degradation of air quality in areas where the air was cleaner than the national primary and secondary standards. This district court decision was affirmed per curiam by the Court of Appeals for the District of Columbia and was subsequently upheld by the Supreme Court.

While the courts mandated incorporation of this concept into the clean air programs of the States, the decisions did not define significant deterioration or otherwise specify an implementation strategy for dealing with the concept.

This task fell to the Environmental Protection Agency. After a series of hearings and the publication of proposed regulations, final regulations were published on December 5, 1974 (39 F.R. 42510).

#### COMPARISON OF NO SIGNIFICANT DETERIORATION EPA REGULATIONS AGAINST S. 3219

The no significant deterioration provisions of EPA's regulations and the provisions of S. 3219 differ significantly. Both proposals apply only to a limited population of emitters. Under EPA's regulations all facilities in 17 designated categories of heavy emitters would be subject to control. Under S. 3219 there are 28 categories controlled, but only those facilities within these categories which emit 100 tons per year of pollutants would be controlled. Only major emitters would be subject to both the technology and incremental pollution requirements of the no significant deterioration provisions of S. 3219.

While both proposals are implemented through permit programs to give builders certainty regarding the specific application of the program to a proposed plant in time to plan construction commitments, EPA's program is based upon Federal permits S. 3219 delegates this important permit program to State control in order to enhance responsiveness and flexibility.

Under EPA's program the Nation's clean air areas are divided into three classes. Class II, which includes all areas until redesignated, is essentially the same as class II under S. 3219. In these class II areas an additional burden of pollution is permitted as specified by a list of increments for sulfur dioxide and particulate matter. These increments are identical in both programs and are consistent with environmentally controlled industrial growth.

Both EPA's program and S. 3219 provide for class I areas where maximum protection of clean air resources is required. Under EPA's program class I areas would be created through a redesignation process upon application of the State or a Federal land manager. Once an area is designated under EPA's program a set of increments substantially restricting pollution goes into effect. There is no flexibility.

Under S. 3219 class I areas include national parks, international parks, national memorial parks, and wilderness areas over 5,000 acres in size. The States may in their discretion add areas to the class I category, requiring only one concurrence of the Federal land manager in the case of Federal lands. The mandatory class I areas provided for in S. 3219 comprise slightly more than 1 percent of the land area of the United States.

There is a substantial difference in the impact of class I increments under S. 3219. The ultimate test applicable under S. 3219 is whether a proposed facility will have an adverse impact upon the air quality related values for which the class I area was created. The increments are employed as prima facie evidence of harm shifting the burden of proof in a determination of impact to the State or land manager where increments are met and leaving the developer an opportunity to establish the safety of a facility even though the increments are exceeded.

This flexibility not only recognizes that the ultimate purpose of class I designation is to protect critical land resources, but provides a mechanism which will be invaluable in reevaluation of proper levels of control for environmentally sensitive areas in the future.

Class III areas may be established under EPA's no significant deterioration program. In these areas pollution would be permitted to increase up to secondary standards.

The committee rejected this concept.

The ambient standards of the Clean Air Act were intended to identify threshold levels of pollution above which pollution endangers public welfare and safety. To permit the deterioration of a clean air area up to these thresholds intentionally flirts with the dangers identified by the standard.

These standards were not intended as targets in clean air areas but rather as goals where the air is already dangerous to public health and welfare.

Both EPA's regulations and S. 3219 undertake to maximize the utility of clean air resources by requiring new facilities to install technology to conserve these resources.

Under the EPA program the technology standard is the same as new source performance standards established pursuant to section 111 of the Clean Air Act.

Under S. 3219 the States are given control of this technology standard and may devise specific requirements in response to clean air needs taking into consideration also the economic and energy implications of their requirements. EPA's new source performance and hazardous emission standards are imposed as a floor for State best available control technology standards, but the State retains flexibility to require technologies even more stringent than these EPA standards.

Such a flexible approach will spur technological innovation on a much broader basis than uniform national standards, which have tended to restrict the scope of technological experimentation.

The EPA no significant deterioration regulations have come under considerable criticism from industry and environmentalists. Several industrial organizations joined in a judicial challenge to the regulations—American Petroleum Institute, et al. against EPA—alleging that EPA has exceeded its authority under the Clean Air Act in the promulgation of its program. The case is presently pending in the Supreme Court.

The Senate Public Works Committee received requests both from industries and public agencies to examine the EPA program and to develop a clear legislative policy on the issue. This we have done in section 6 to S. 3219.

I believe that the committee's provision provides for a program with considerable flexibility. And the Committee has provided the mechanism for further study of the concept of no significant deterioration in the National Air Quality Commission. The Commission's investigative review will furnish a basis for fine tuning the increments and standards of our program.

Arguments against no-significant deterioration have stated that primary and secondary standards are sufficient protection for the Nation's air. But these arguments misconstrue these standards. It was not the intent of the drafters of the Clean Air Act in specifying standards for identifying dangerous air quality conditions to make those levels the targets or goals for the Nation's clean air areas.

To follow the course of using existing ambient standards as no significant deterioration standards would invite pollution up to a level that endangers the safety and welfare that these standards are intended to protect.

And to abolish the concept of no significant deterioration would leave EPA with no enforcement mechanism to protect against pollution in clean air areas.

There can and should be continuing debate over the definition of safe incremental levels of pollution and how those levels are applied against or derived from existing background air quality conditions. The increments in S. 3219, although a reasonable first-cut, are not carved in stone. The work of the National Air Quality Commission should provide valuable assistance for fine tuning these numbers.

#### AUTO EMISSION STANDARDS

The committee, after a tremendous effort to assess the implications of this legislation on the automobile, has arrived at what I feel is a

well-conceived strategy to make this last step toward achieving the cleanest vehicles possible. This decision required a balancing judgment which assessed the technologies available for emission control, the different types of costs of each technology, and the benefits to be derived from clean air when certain levels of emission are reached.

Industry has responded to the congressional mandate of the 1970 Clean Air Act in an inventive fashion by progressively cleaning up the automobile. There have been differences of opinion along the way but this is only to be expected when the work required was at the brink of our technological knowledge and expertise. Working together, we have reduced pollution from the automobile an average of 85 percent for some pollutants. This is indeed a great stride. But we now know that in most of our metropolitan areas, pollutants from vehicles still pose a major health problem. Pollutants must be further controlled to eliminate these problems and to protect the health and welfare of the American people.

In many of the markup sessions, and in private meetings with auto manufacturers, I have heard four general criticisms about the emission standards contained in the Clean Air Act. The first of these was that the technology did not exist for this type of control and would not exist in the time frames allowed by the act. However, the committee has found that the technology needed to meet the proposed standards will be available in the allowed time period. The Administrator of EPA has even indicated that these levels could have been met on 1976-77 models for the pollutants HC and CO.

The specific technology is described in the joint EPA and FEA analyses on the impact of alternative vehicle emission standards. Control would include start catalysts or cannister storage of cold start HC, improve chokes, fully proportional EGR, electronic spark control, and possibly, catalytic control of NO<sub>x</sub>.

Some 1976 certification vehicles calibrated for 0.9/9/2 were able to come within 20 percent of meeting the 1980 California standards of 0.4/3.4/1.0 with deterioration accounted for. These vehicles are meeting standards with existing technology. Although some vehicles meet the standards in certification tests, only one car, Volvo, meets the standards on the road. This does not imply that full production could meet these standards with existing technology. It does, however, mean that certain models could be produced and that the technology is within the range of availability.

The second common criticism was that present and near future technologies for auto emission control would result in significant fuel economy penalties. This problem may in fact exist in the first few years. However, as optimal technology is developed and adopted, this side effect can be eliminated. Further fuel economy benefits can be obtained by incorporating nonengine changes such as weight and power reductions.

These types of benefits are discussed thoroughly in technical papers prepared by people in the automotive field and in the EPA/FEA summary report.

Another complaint frequently heard from manufacturers was that standards for mobile source emissions are not equal to the standards for other types of emission, especially stationary sources. This is a good idea philosophically but it may not be possible. The types of technologies available for different types of sources differ in their

capabilities to meet the standards. The Clean Air Act should be interpreted to mean that each particular group should move forward as quickly as possible toward the ultimate goal of clean air. The standard on all sources should be geared to achieve this forward progression. This, in effect, is the equity allowed for in the Clean Air Act. Some previous analyses show that for the pollutant  $\text{NO}_x$  the standards are being exceeded. Considerable progress has been made in controlling autos but there is more benefit to be gained by placing additional controls on stationary sources. Stationary sources, however, cannot be grouped together any more than can all mobile sources. The costs and technology available to reduce auto emissions by a certain percentage differ significantly from the costs and technology available to control powerplants. One important consideration is that mobile source control is cost-effective. Once the technology is developed, vehicles can be adapted as they roll down the assembly line. Equipment can be centralized. With stationary sources, improvements must be made, of necessity, on a plant by plant basis.

A final argument is that the costs of achieving these final reductions in mobile source emissions far outweighs any health and welfare benefits. I have already discussed the fuel economy problems above so I will not dwell on that here. I would, however, like to focus our attention on the benefits to be derived from these controls in major metropolitan areas. We know now that the ambient air quality standards for oxidants, CO and  $\text{NO}_x$ , are being exceeded in many of these metropolitan areas. The levels of these three pollutants are severely influenced by the automobile. In some cases as high as 75 percent of these pollutants are vehicle related. In fact, mobile sources can often be responsible for 90 percent of CO, depending on the region. It would therefore seem logical that the changes in vehicle standards in the proposed Senate amendments could be expected to result in significant ambient air quality improvements. The National Academy of Engineers, in their September 1974 report to the Senate Committee on Public Works, "Air Quality and Automobile Emission Control"—volume 4, page 12—states:

If major reductions in automotive emission rates can be achieved they should make a major contribution to urban air quality. Indeed this conclusion follows almost tautologically since automobiles account for very significant percentages of the  $\text{NO}_x$ , HC, and CO emissions in urban areas.

NEED FOR EFFECTIVE POLLUTION CONTROL WARRANTIES [See sec. 207(b)(c)]

Mr. BUCKLEY. One of the issues that will be discussed at some length during the debate on this bill involves the emission control warranty that is now required on new cars for 5 years or 50,000 miles. I recently wrote to EPA Administrator Train to ask for his evaluation of the effects of proposals to shorten the warranty. I believe his answer will be very helpful to the Senate in understanding of ill effects of shortening the term of the performance warranty.

U.S. ENVIRONMENTAL PROTECTION AGENCY,  
Washington, D.C., July 20, 1976.

HON. JAMES A. BUCKLEY,  
U.S. Senate,  
Washington, D.C.

DEAR SENATOR BUCKLEY: Thank you for your June 21, 1976, letter concerning the section 207(b) performance warranty provision of the Clean Air Act Amend-

ments. Before addressing the questions posed in your letter, I would like to present a brief summary of our present position regarding the existing § 207(b) performance warranty. As you know § 202(a) of the Clean Air Act requires manufacturers to build vehicles which will meet applicable emission standards for five years or 50,000 miles whichever occurs first. One means of ensuring the achievement of this obligation is the § 207(b) warranty. Under the terms of such warranty, a manufacturer will be required to bear the cost of repairing any vehicle if it: (1) has failed a § 207(b) short test, (2) has had proper maintenance and use by the owner, and (3) has subjected the owner to a fine or other penalty due to its nonconformity. The term of the present § 207(b) warranty is statutorily set for five years or 50,000 miles.

The proper maintenance condition of the warranty has given rise to a perception by aftermarket part manufacturers that vehicle owners will avoid the use of aftermarket service and parts once the warranty is implemented in order to protect the warranty coverage. EPA has cooperated with the aftermarket parts manufacturers in the development of a voluntary self-certification program for certain automotive aftermarket parts. This program is designed to substantially reduce any anticompetitive effect of the warranty. It is, of course, speculation as to whether the warranty would produce an anticompetitive effect since it is not now implemented and will not be for at least several months.

With this discussion in mind, I will address each of your questions separately.

(1) Does present law, together with the amendments now included in S. 3219, pose any anticompetitive danger to the independent aftermarket companies?

In order to answer this question it is important to understand the arguments which have been made with regard to the anticompetitive potential of the § 207(b) warranty. Aftermarket interests have stated that their primary market is for vehicles at least two years old. Their concern is that in order to maintain § 207(b) coverage, owners will return exclusively to dealers for maintenance during the later years of the vehicle's life.

There are two approaches to reduce this potential anticompetitiveness of § 207(b). The term of the warranty could be reduced or assurances could be provided that the use of aftermarket service and parts will not, in and of itself, void the § 207(b) warranty.

It is my opinion that the present five year/50,000 warranty, together with implementation of the aftermarket program presently being developed, is not necessarily anticompetitive and should not be dismissed without trial. With regard to S. 3219, it is clear that the amendment to reduce the § 207(b) warranty term to 18 months or 18,000 miles, whichever comes first, would alone obviate the anticompetitive potential of § 207(b). But in so doing, it would eliminate what could be a substantial aid to the achievement of the emission standards by in-use vehicles. The aftermarket provision of the bill, requiring that a part certification program be implemented in conjunction with the 18 months/18,000 miles warranty, is of little benefit and, as a mandatory program, would result in the misallocation of resources.

(2) Does the § 207(b) warranty restrict the ability of the car owner to obtain normal service and maintenance wherever he chooses, without infringing the warranty?

The question raises the issue of the effect of the use of aftermarket service on the coverage of the § 207(b) warranty. Section 102(c) of the Magnuson-Moss Act provides that:

"No warrantor of a consumer product may condition his written or implied warranty of such product on the consumer's using, in connection with such product, any article or service (other than article or service provided without charge under the terms of the warranty) which is identified by brand trade or corporate name. . . ."

It is my view that even without an express prohibition in the Clean Air Act regarding discrimination against use of aftermarket service by vehicle owners, the Magnuson-Moss Act would make such actions by manufacturers or their dealers unlawful. Thus, the § 207(b) warranty, when read in conjunction with § 102(c) of the Magnuson-Moss Act, does not restrict the ability of the consumer to obtain maintenance services where he chooses.

Under S. 3219, vehicle manufacturers are prohibited from "distinguishing between service performed by franchised dealers of such manufacturer . . . and service performed by independent automotive repair facilities. . . . (S. 3219, § 207(c)(3)). Of course, to the extent that S. 3219 would provide the Agency with jurisdiction to enforce the prohibition against non-dealer service (the Mag-

nuson-Moss Act is administered by the Federal Trade Commission), the prohibition—and the consumer's position—would be strengthened.

(3) Would a reduction in the warranty, transferring responsibility to the consumer from the manufacturer, tend to discourage development of effective inspection and maintenance programs at the local level.

Data collected in 1972 identified 29 areas which would require significant reductions of carbon monoxide and photochemical oxidants in order to meet air quality standards. Control of mobile sources is one of the primary mechanisms by which the air quality standards will ultimately be met in these areas. Inspection and maintenance programs are an extremely important means of achieving mobile source emission reductions.

Reduction in the term of the § 207(b) warranty to 18 months or 18,000 miles may reduce the desirability of an inspection and maintenance program because the warranty will, in all likelihood, be in effect for only one annual inspection. When consumers return for later inspections, the costs of any mandated repairs will be paid by them despite their having properly maintained and used their vehicles. It is clear that in the later years of the useful life of a vehicle the performance warranty is most needed because it is at this time that the durability of the vehicle is actually tested. The application of the warranty coverage to vehicles approaching 50,000 miles is expected to increase public support and thereby provide States and localities with an incentive to implement an inspection and maintenance program. In addition, vehicle owners will be motivated to properly maintain their vehicles.

These potential adverse effects of shortened warranty coverage on the inspection and maintenance program are anticipated by EPA but are not based on any formal survey of localities which may need inspection and maintenance. However, a number of jurisdictions considering mandatory inspection and maintenance—most notably, the City of Chicago—have indicated that implementation of such programs would be substantially enhanced by the implementation of the § 207(b) warranty. It is my belief that a reduction in the term of the § 207(b) warranty will defer initiation of inspection and maintenance programs of many areas. Should reduction in the term of the present five years/50,000 miles warranty be inevitable, some mechanism to encourage implementation of inspection and maintenance programs should be substituted.

(4) Would a reduction in the term of the § 207(b) warranty be likely to lead to a lowering of quality control by the automakers?

The enforcement provisions of § 207 (as well as the assembly line testing authority of § 206) were intended to ensure that production vehicles would conform to applicable emission standards both when new and also at the end of their useful life. The § 207(b) warranty provision was viewed by the Senate as one means of assuring that "margins of safety will be built into each vehicle to insure better than required performance [and] systems will be designed to minimize deterioration. . . ." (A Legislative History of the Clean Air Act Amendments, Ser. No. 93-18, 93rd Cong., 2d Sess. 135 (1974).) Consequently, the § 207(b) performance warranty is uniquely structured to promote better production practices and improved designs by manufacturers. However, a limitation on the term of the warranty could inhibit this beneficial effect.

In a situation where a § 207(b) claim will arise, the duty to repair the properly maintained and used vehicle which has failed to meet emission standards falls upon the owner. This is mandated by the existing Clean Air Act. When a vehicle fails an inspection and maintenance (§ 207(b)) test, its owner must obtain repair or cease driving his vehicle. Thus, in contrast to recall provision of the Act which creates a voluntary responsibility upon the owner, an inspection and maintenance triggered duty of repair is mandatory. We believe that virtually all vehicle owners will return to their dealers for § 207(b) warranty repairs required by the State inspection. As a result, the reduction of the term of the § 207(b) warranty could serve to minimize the manufacturer's risk of having to remedy improper design of emission control elements and also decrease the incentive for improving the quality control of emission components. The function of ensuring that durability is incorporated into vehicle design and production would then be shifted to the § 207(c) recall provision and the § 207(a) production warranty. The § 207(a) warranty applies only to defects in material and workmanship and not to the deterioration of a component or system which occurs due to the use of the vehicle. Recall, on the other hand, does have significant potential to affect durability. However, a recall investigation is a protracted and resource-

intensive process. The nature of this process will inherently limit the number of recalls that will actually be achieved. It is also worth noting that one source of automobile emission data needed for recall is the inspection and maintenance program which, as suggested above, might be curtailed as a result of the shortened warranty proposed by the Senate Committee. Further, the owner response rate to recall notices declines with the age of the vehicles so that there is some question as to the effectiveness of recall as a deterrent in the waning years of a vehicle's useful life.

On this basis, I must conclude that our ability to elicit the much-needed improvement in durability of emission controls will be impaired if the term of the warranty is reduced.

(5) Would reduction in the warranty term be likely to result in the production of cars that emit more pollution over their actual life?

The question is clearly related to question four discussed above. To the extent that the deterrent effect of the enforcement provisions of the Act is diminished by a reduction in the term of performance warranty, it is unlikely that vehicles will be designed and manufactured so as to continue to perform within applicable emission standards for their "actual" life.

(6) What is the cost to the consumer of the section 207(b) performance warranty?

At our current stage of development of the § 207(b) warranty program we can not quantify its probable cost to the consumer.

It is our intent to acquire from vehicle manufacturers economic data bearing on this question through publication in the *Federal Register* of notices regarding the § 207(b) warranty. Such data will be obtained and an economic analysis performed before regulations implementing § 207(b) are finally promulgated.

If I can be of further assistance, please do not hesitate to contact me.

Sincerely yours,

RUSSELL E. TRAIN,  
*Administrator.*

Mr. TOWER. The proponents of land use control in this body have today returned to the floor.

There is no question in my mind that the no-significant deterioration provisions of the "Clean Air Act Amendments", S. 3219 [Secs. 160-169], are in fact a structure through which the Federal Government will in the future dictate the use of land for a single-purpose—maintenance of standards above those necessary to protect the health and welfare of the American people.

Proponents of nondegradation have attempted to calculate the sentiments of the American people, and to appeal to those millions of Americans who are rightfully concerned about our environment. Their arguments flow smoothly with reassurances that with these amendments, all will be well in this land of ours; that mankind will truly be protected from himself.

Those of my colleagues who propose the imposition of land-use controls through the no-significant deterioration sections of S. 3219 no doubt are very concerned with the health and welfare of all Americans.

However, I do resent the implications in such arguments that those of us who oppose plunging this country into a deeper morass of Federal regulation are not equally concerned.

On June 4, 1976, the Congressional Record carried a speech entitled "President Ford Chooses Dirty Air," referring to the President's position that Congress ought to refrain from enacting a statutory policy on no-significant deterioration.

In that statement on June 4, the comment was made that—

The President would prefer uniformly dirty air across the country rather than the protection of public health and protection of the other values of our finite air resource.

One would think, from reading that statement, that the President, and those of us who agree with the President, are ready to abandon our commitment to high standards of public health.

What was not stated is that laws protecting public health from the dangers of air pollution are already on the books, and are being vigorously enforced by the Environmental Protection Agency.

What was not stated in this June 4 speech is that the primary and secondary ambient air standards are already in place, and are judged to be fully sufficient to insure that Americans' health and welfare are protected.

Such are the tactics of those who would infringe upon the individual's right to property through the imposition of Federal land use controls.

There is, however, a second part of the statement I referred to and that is the protection of the other values of our finite air resource.

What exactly is meant by that? Does it mean that the air should be free of particulate matter which may cause a haze, such as that which occurs in our major agricultural areas during plowing?

If that is the case, I think we would be wise to consider that value alongside another value—like food production, or farm jobs.

We all are aware that almost any activity that man undertakes disturbs the condition of the air around us. This Congress has established standards of safety through which a great number of emissions have been and will be controlled in order to reduce this disturbance below the levels required for health and welfare.

But it is quite another thing to speak of the other values of our finite air resource.

Because if we are talking about aesthetic qualities instead of health qualities, we intrude on a realm which is clearly, it seems to me, beyond the responsibility and authority of the Federal Government.

I do not believe this body should impose aesthetic standards, and certainly not those which are gained at the expense of maintaining economic growth, energy development, and food production.

I enjoy clean, clear air just as much as everyone else, and I enjoy it quite often when I am in Texas, because we have quite a lot of clean air.

We also have a healthy State economy, and a lot of jobs, and we have them because Texans have made responsible tradeoffs between esthetic and industrial needs. As a matter of fact, a lot of us believe that the future growth and prosperity represented in the construction of new refinery facilities, bank buildings, and manufacturing plants is a most beautiful sight to behold.

A lot of us, do not believe that beauty is limited to a forest, lake, or prairie. Many of us throughout this country, for instance, regard our first home as a beautiful sight, no matter how humble or proud that dwelling may in fact be.

I do not consider a hospital that daily saves lives as a scar upon the landscape, nor do I feel that a factory which produces the arms that keep this country safe from foreign aggression is a blot on our environmental record.

The point I want to make here is that while some of my colleagues certainly may have their own ideas about aesthetics, and about which cultural values should be predominant, they do not have the right to impose those on me, through the Federal Government.

If a local community decides to exclude major manufacturing facilities from its jurisdiction because of a felt need for preserving a particular landscape or horizon, fine. The citizens who have direct input into the decisionmaking process of the community can make that choice.

But let us not get carried away with these no-significant deterioration provisions to the extent that Washington begins making those choices for the people in that community.

This Congress has done enough to protect the health and welfare of the American people. Why cannot we be satisfied with thus being the servant of the people, instead of attempting to be their master through the arbitrary imposition of these requirements?

There has been, as I pointed out, an attempt to play on the concern of all Americans for a safe environment. But safety and health are not issues here.

What I would hope is that the American people can be left to decide for themselves the issue which is truly at the heart of these nondegradation provisions, and that is the issue of whether aesthetic or economic concerns are more compelling, given the individual circumstances of a State, county, or city.

I do not believe the American people are incapable of making those decisions for themselves, through their local and State governments.

I would urge my colleagues to consider what the American people truly want, and that is to be let alone by the Federal Government.

These nondegradation provisions, intended to preserve some esthetic standard, are just one more attempt to ram Government down the throats of the people in the United States, and I know, for my State at least, that people do not want them.

Mr. GRAVEL. Mr. President, clean air is a valuable resource which we must strive to protect. The amendments, I believe, will continue our efforts to provide a clean air environment for all of our citizens.

The bill which is before the Senate addresses all of these problems and has attempted to provide workable solutions. The bill provides new deadlines for achievement of auto pollution standards, a stationary source compliance date extension procedure, a provision allowing expansion of facilities in air quality management regions, procedure for delay in achieving primary ambient air standards including necessary transportation control, and a provision which implements a nondegradation policy.

The nondegradation provision injects a completely new scheme in our regulation of air quality by providing that levels of two pollutants, sulfur dioxide and particulate matter, must be strictly controlled in so-called clean air areas. The amendments provide that the State Implementation plan shall be the mechanism for implementation of the nondegradation policy.

While I support the need for a nondegradation provision to protect air which is currently better than secondary standards, the method used to protect air quality disturbs me. The increment for sulfur dioxide and particulate matter established in the amendments for determining air quality impact provide the basis for determining whether a major emitting facility can be established in an area designated as class I or class II under the State plan. These increments are those which were provided in the Environmental Protection Agency regulations on nondegradation issued in December of 1974. I am not

convinced that these increments bear any relationship to the maintenance of clean air and were not adequately studied as they affect all regions of the country.

Natural conditions in some areas could mean that little, if any, development could be undertaken even though the values that nondegradation are designed to protect would not be affected. Particulate matter is troublesome because of high background levels from natural sources such as river beds, agricultural lands, and glacial areas of Alaska during some portions of the year. The 24-hour standard for particulate matter could thus be violated and no development would be permissible. Further, particulate matter is an imprecise term and thus could present problems greater than those which we are attempting to prevent. Areas subject to temperature inversions could also have difficulty meeting the 24-hour and annual increments established for sulfur dioxide and particulate matter.

I feel that a careful study of the effect of the increments is necessary. We must have information which demonstrates the rationality of the increments to the desired result—protection of clean air.

Mr. GARY HART. In my home State of Colorado, there is substantial support for maintaining a strong Clean Air Act.

The following letter from Colorado's Governor Lamm succinctly expresses the rational for a strong nondegradation provision as well as for maintaining tight auto emission regulations.

STATE OF COLORADO,  
EXECUTIVE CHAMBERS,  
Denver, Colo., April 30, 1976.

HON. GARY HART,  
U.S. Senate,  
Washington, D.C.

DEAR GARY: I am writing to reiterate my support for maintaining a strong Clean Air Act.

When the House and Senate amendments to the Clean Air Act are considered on the floor, there may be attempts to weaken the Committee's bills. I strongly feel that any effort to further weaken the Clean Air Act should be resisted. The bills which are coming to the floor represent very weak proposals. I encourage Congress to strengthen the prevention of significant deterioration and automobile emission provisions.

#### PREVENTION OF SIGNIFICANT DETERIORATION

The National Governor's Conference has adopted the position that the issue of significant deterioration should be resolved by Congress. For six years, the issue has been studied, litigated and debated. Now is the time for Congress to act.

The prevention of significant deterioration (PSD) of air quality in Colorado is of extreme importance to the quality of life enjoyed by its citizens and to the economic well being of tourism, the State's second largest industry. The development of energy resources in the midst of an internationally recognized recreation area presents critical conflicts between competitive resource uses. I am confident that Colorado will be able to address this dilemma while maintaining the quality of an important scenic and recreational area. Many areas of Colorado desperately need economic development, but in the process of development, we must not destroy the natural beauty that the citizens of Colorado so cherish.

I concur with many of Senator Gary Hart's concerns with the PSD provisions. The Senate bill should be amended to provide that Federal Lands set aside to preserve their natural state (national monuments, national recreation areas, wild and scenic rivers and national wildlife refuges) will be initially designated class I. It would be wholly inconsistent to preserve the natural condition of these areas, while allowing the air over them to be degraded to the levels of polluted metropolitan areas. The Congress has the solemn responsibility to maintain the pristine quality of the air over these lands.

In the spirit of Section 116 of the Clean Air Act, states should be permitted to enact more stringent PSD standards. The Senate bill should be amended to permit states to redesignate any Class II land within their boundaries as Class I.

The definition of the Best Available Control Technology needs to be strengthened to minimize emissions from each source, thus permitting more sources to fit within the allowable increments.

A date not later than July 1, 1976 should be specified as the baseline air quality. If such a date is not specified, areas with clean air now could be degraded more rapidly. Further, new sources which commence construction between 1972 and 1976 should be subject to the Best Available Control Technology. These sources have been on notice since 1972 that the Clean Air Act of 1970 required the prevention of significant deterioration.

I am also concerned that allowable increments may be used up by a number of small sources. Congress needs to establish a review program to prevent small sources and ancillary development from expending the PSD increments.

It should be noted that a recent survey (by the Opinion Research Corporation of Princeton, N.J.) reported in the *National Journal* (11-22-75, p. 1590) found that "... 94 percent of those polled said air that currently is clean should not be allowed to get dirtier."

I would like to stress that, contrary to a number of reports, the PSD provisions will not impose a "no growth" policy on Colorado or prevent the rational development of our State's resources.

Congress has failed to provide the states with the financial resources necessary to implement a PSD program. The Committee's provisions will require a capital expenditure of \$1.2 million and an annual recurring cost of \$500,000 from Colorado. Without federal assistance, it will be very difficult for Colorado to implement this important program.

#### AUTOMOBILE EMISSION STANDARDS

Congress should hold the line on automobile emission standards. I question whether a further relaxation of the Committee's standards can be justified by technological or economic unfeasibility. Colorado is presently modifying its transportation control plan in order to provide realistic and implementable clean air strategies. Such a complex effort becomes nearly ineffective if we cannot rely upon the expeditious attainment of the new car standards. Such standards must be achieved at Denver's altitude and maintained throughout the useful life of vehicles.

In closing, I urge you to resist any weakening amendments to the Committee's bill. Thank you for the opportunity to comment on this important matter.

Sincerely,

RICHARD D. LAMM,  
Governor.

Mr. GARY HART. The Congress first explicitly recognized the need to "protect and enhance the quality of the Nation's air resources" in the 1967 Air Quality Act. This helped lay the groundwork originally for the Clean Air Act of 1970, and now for the no-significant deterioration provision of S. 3219, the Clean Air Amendments of 1976.

The reasons for preventing significant deterioration of air quality are most compelling. Without a sound policy for maintaining clean air in pristine areas, air quality in cherished places like the Grand Canyon, the Rockies, the Smokies, and the Everglades could eventually deteriorate to the levels which are today found in downtown Boston, Akron, Detroit, and Pittsburgh. Visibility would be reduced from 80 to 100 miles down to 12 miles or less.

At first this might appear to be a superficial argument, but the concern about visibility is not isolated from other issues. For example, the same pollutants that reduce visibility can have a significant impact on crop production. The Administrator of the Agricultural Research Service has testified repeatedly that present levels of air pollution are responsible for significant reductions in both the quality and yield of

numerous crops, with yield reductions in some locations ranging as high as 75 percent. In addition, a study by the National Academy of Sciences suggests that a doubling of pollution levels on the east coast could, under otherwise favorable conditions, produce a 25 to 100 percent loss of many crops and also cause severe injury to many natural species. These are risks that, as a society, we cannot afford to take.

The majority of the land mass of the United States today still has air quality which is better than the national ambient standards. The no-significant deterioration section of S. 3219 will protect these areas and hence the public health and welfare while permitting the kind of economic development necessary to improve our standard of living.

The no-significant deterioration section of the committee bill:

Assures prudent consideration of any major remitting facility that may threaten air quality where the air is cleaner than the present national standards;

Applies only to new major emitting facilities, not affecting existing facilities;

Requires that large new sources use the best available technology to minimize emissions, determined by each State on a case-by-case basis;

Places primary responsibilities and authority with the States, backed by the Federal Government;

Requires the Federal Government, as a property owner, to protect the values related to air quality on certain Federal lands under the stewardship of various Federal agencies; and,

Eliminates the so-called "buffer zones" that were hypothesized around various land classifications.

To define what significant deterioration is, with respect to specific pollutants, the Committee has incorporated in the bill a set of numbers—the so-called "increments"—that specify the allowable change in ambient air quality. These "increments" are technical measures of the amount of total additional pollution that may be added to the ambient air by a single new major facility or series of facilities. These increments are the same for all nondeterioration areas, thus providing equity for all areas. The increment, of course, is measured from the baseline ambient air quality. The increment would thus be in addition to whatever levels of pollution exist from present sources. The only exception occurs when pollution up to the increment would produce ambient air exceeding any primary or secondary standard. If that occurs, the full increment normally may not be used, and the national ambient standards set the ceiling for additional ambient pollution.

The chief tool to be used in implementing the no significant deterioration requirements is the permit that must be issued by the State for any major emitting facility to be located in any clean-air area. The bill defines major emitting facility for this purpose as any source that falls into one of 28 industrial categories listed in the bill, if the source would also have the potential to emit more than 100 tons of any pollutant per year. If a source falls in a category listed but would be smaller than the 100 tons per year figure, it is not subject to the procedures in this act.

As I understand it, the intent of the committee in exempting non-major sources from the act was to simplify implementation by limiting regulation to the largest potential polluters. Superficially, at least, this appears to make good sense. Regulations and permits which would

cover all emission sources would pose an intolerable regulatory burden, undoubtedly causing more problems than they would solve.

However, the carte-blanche exemption of non-major sources provided in the committee bill similarly would create a bureaucratic nightmare, for this exemption dictates that the growth "increments" would apply only to new major sources. Pollutants contributed by new non-major sources would not be included. This means that permit applications for all but the first new major facility in any area would have to include technologically complex "pollutant origin assessments" in order to determine how much of each pollutant growth increment remained available for use.

In addition to the totally unnecessary administrative burden added by this procedure, eliminating consideration of pollutants contributed by non-major facilities constructed after enactment is entirely contrary to the intent and purpose of the Clean Air Act itself. Sulfur dioxide is sulfur dioxide—and it doesn't matter whether it comes from one large major source or from 1,000 small non-major sources. The effects are still the same.

For these reasons, I have introduced an amendment (No. 1610) which provides that pollutants from non-major as well as major sources be considered in determining the amount of an "increment" which remains available for use.

On page 79, line 6, after the phrase "major emitting facility" insert "or other source".

This amendment will not extend the permit application procedure the best available technology requirement, or any other regulations to non-major facilities. It simply streamlines what would otherwise be a cumbersome evaluation procedure to assess the remaining pollutant "increment" balance.

Perhaps an example would best illustrate both the problem associated with the proposed evaluation procedure as well as the solution afforded by this amendment. Let us assume that, after enactment, a new primary lead smelter is constructed by the Rolling Stone Manufacturing Corp. near the Mossy National Park, a class I increment area. In addition, let us assume that numerous other small industrial facilities subsequently are attracted to this same area as well as the normal complement of support services including both commercial and residential development.

According to the committee bill, only the large smelter would have been subject to the best available technology and emissions permit requirements. The smaller industrial, commercial, and residential facilities which were subsequently added and which individually would emit less than 100 tons of sulfur dioxide per year, would have been exempt from the permit-granting procedure. My amendment would not affect this in any way.

Now let us assume that 10 years later, Rolling Stone Manufacturing decides to construct a large sulfuric acid plant, and considers among other locations, a second site near Mossy National Park. According to the committee bill, evaluation of the sulfuric acid plant's emissions permit application would require not only measurement of the sulfur dioxide concentration in Mossy National Park, but determination of how much of this sulfur dioxide is contributed by the smelter versus new ancillary development and "old" (previously existing) facilities.

This complicated pollution origin analysis would be required because the committee bill provides that the growth "increments" apply only to pollutants from new major sources.

Aside from the technological difficulties inherent in pollution origin assessment, it is irrelevant whether the sulfur dioxide in Mossy National Park comes from the Rolling Stone smelter or from other sources. All the sulfur dioxide in the Park's air should be taken into account in determining if the proposed sulfuric acid plant should be located in the same area. My amendment would require that pollutants, regardless of source, be considered under these circumstances.

This amendment will simplify implementation of the no-significant deterioration provision of S. 3219. It will facilitate the permit-granting procedure and help alleviate the committee's concern that this process might possibly become a vehicle for inaction and delay. It will also reinforce the committee's concern regarding ancillary development as summarized on page 23 of the majority report:

In studying the permit application, the State must examine the growth associated with any proposed facility in terms of other industries that might be attracted to the area and associated with the facility, and its effect on support services, and the residential, commercial and transportation needs accompanying the facility.

This is not a question that should be left solely to one sentence of legislative intent in a committee report. This is a crucial issue which should be addressed in the language of the bill itself.

It is not enough to say that States must examine the potential effects of future nonmajor growth during review of an application to allow further major growth. The review process must also include a continuing mandate to consider actual levels of existing pollutants—regardless of their original sources.

This is not a theoretical problem of little significance. A report recently prepared for me by the Office of Transportation and Land Use Policy of the Environmental Protection Agency, begins with the following statement:

Residential, commercial and institutional facilities resulting from general area-wide growth play a significant role in determining overall air quality. Their accompanying fuel needs for space heating and solid waste disposal facilities represent substantial contributions to an area's air pollution.

The report goes on to document this statement. It cites, for example, a location in Ocean County, N.J., where in 1972, ancillary areawide growth already accounted for 45 percent of the total—particulate matter. According to the report, it is estimated that by 1990, areawide growth in this region will account for 72 percent of the particulate air pollution. In addition, the report indicates that areawide sources now contribute over 69 percent of the particulate air pollution in Denver, Colo. The Environmental Protection Agency concludes that—

Area wide growth accounts for a substantial percentage of total emissions. Projected increases or decreases, of course, depend to a large extent on the air quality maintenance program within a specific region. It is important to realize, however, that facilities resulting from a general area wide growth play a major role in determining overall air quality.

It is obvious from these figures that nonmajor sources make a substantial contribution to air pollution in many areas. I acknowledge that it would be next to impossible to extend rigid emission control measures to all sources. We must focus our attention on the biggest

problem first—and with respect to emission limitations, that means concentrating on major sources.

However, in conjunction with this, we must acknowledge the potential for substantial emissions from new nonmajor sources. This can be done simply and effectively by requiring that the increments apply to pollutants regardless of source, as provided by amendment No. 1610.

Mr. GOLDWATER. Congress should stop making political hay out of the whole clean air business. What impact will these well intended and sweeping regulations have on our citizens, the economy, and our Nation's progress? Do they not contribute to the already escalating bureaucracy and the overwhelming entry of the Federal Government into the business of States, private companies, and the lives of the people?

No one wants pollution or the destruction of the beauty of our land—that is not the issue at hand. What we must do is protect the public health and welfare and set standards that will be fair to all segments of our population and not just benefit a few special interest groups.

The opposition to the Clean Air Act amendments has increased steadily throughout the country. For example, in my own State of Arizona groups which cut across all levels are demanding that the Federal Government stop adding more and more controls, expenses, and intrusions into their lives. One area that my constituents keep coming back to, is the no significant deterioration provision. They are worried about the effect this proposal will have on them and their communities, and rightly so.

Until we are completely sure of the implications of this section, it might be prudent to have a thorough study of the nondeterioration policy, to decide if it should be implemented. Such a study is called for in Senator Moss' amendments to the Clean Air Act of 1970 and it is legislation that we should support.

Although the many bureaus and agencies might consider themselves acting in the public interest, the people of my own State feel they are capable of acting in their own behalf, probably better than any bureaucrat. These regulations and agencies tend to create more problems than they solve. Citizens recognize that they must bear the economic and social costs of these actions and consequently, want workable, reasonable standards they can live with.

It is high time that we, the Congress fulfill our responsibility to provide for a fair interaction on environmental matters between the State and the Federal Government. In this way only, will we achieve the goal of a clean and safe environment. We must resist the rush to legislative and then administrative fiasco.

Mr. MUSKIE. During the 13 years that I have been chairman of the Senate Pollution Subcommittee, I have watched the evolution of environmental laws.

We began simply. We authorized the development of the Federal expertise necessary to understand the scope of environmental problems. We established programs to assess the development of State and local regulatory programs. We established a rudimentary Federal enforcement capacity to deal with those environmental problems which did not respect jurisdictional boundaries. And, we began the process of regulating auto emissions—a task which required a Federal presence.

Our knowledge expanded. The public became more aware of environmental problems. The Congress attempted to respond to the public demand for a significantly greater level of performance in the pollution control effort.

In 1970 we enacted the landmark clean air amendments, which had three basic objectives: first, to achieve air quality which would protect public health; second, to establish specific regulatory requirements and precise timetables for achievement of those requirements; and third, to establish long-term public policy goals for air quality programs.

The Clean Air Act was the result of our belief that public confidence had to be restored in both the progress and the results of these programs. For too long, promises had been made and results had not been delivered. Autos which purportedly met stiff standards on the production line failed to comply after minimum mileage. Enforcement actions were tedious—the results ranged from limited to non-existent. Examples of failure are too numerous to mention.

We had a choice: We could continue and try to improve past initiatives or we could change course and experiment with innovative methods which might achieve results at a more rapid pace.

The Clean Air Act of 1970 was a new departure.

We knew our goals. They had been established in 1967 when Congress asserted a national interest in achieving health-related air quality standards in our Nation's urban-industrial areas and in maintaining clean air in regions in which air was still pristine.

The question we addressed in 1970 was how to achieve these goals—how to move from rhetoric to regulation—how to maintain public confidence.

We proposed and saw enacted two basic tools—controls on emissions and establishment of deadlines. Emission controls replaced air quality standards as the enforcement mechanism; and deadlines provided the public with a basis against which to judge progress. For autos, this translated into statutory emission standards and fixed deadlines.

The 1970 amendments have brought considerable progress in controlling air pollution. Of the Nation's 20,000 largest stationary sources accounting for 85 percent of all stationary source pollution, 15,600 were in compliance with emission regulations or were meeting compliance schedules by mid-1975.

Between 1940 and 1970, controllable particulate emissions increased 15 percent, sulfur dioxide increased 50 percent, carbon monoxide and hydrocarbons emissions more than doubled, and nitrogen oxide emissions quadrupled.

Since 1970, these increases have been curtailed. Total emissions of some pollutants have been reduced. We should take pride in these accomplishments. But in most cases, these improvements will be temporary.

By mid-1975, the national ambient air quality standards for all pollutants have been fully achieved in only 91 of the Nation's 247 air quality control regions. Emissions from new growth will reverse this progress unless further efforts are made to control pollution.

The real test of pollution control comes now—years later. Whether or not the legitimate gains made can be held is uncertain. Those victories and those precedents are now under attack.

Many believe that the Clean Air Act is basically a sound law. Its premises—the protection of public health and welfare from the adverse effects of dirty air and the maintenance of clean air in areas where air quality has not been degraded—have been broadly accepted.

In order to assure Congress that the requirements of the 1970 act were justified, the Senate Public Works Committee contracted with the National Academy of Sciences for a \$500,000 study of air quality standards. That study was presented September 1, 1974. Its analysis remains valid.

The Academy reached these conclusions:

First, evidence accumulated since the enactment of the 1970 amendments supports the ambient air quality standards which were promulgated as a result of that act;

Second, safety margins associated with those standards are only marginally adequate;

Third, susceptible groups in the population which may be adversely affected by unhealthy air constitute about 40 million people;

Fourth, best estimates indicate that air pollution causes 15,000 excess deaths per year, 15 million days of restricted activity per year, and 7 million days spent in bed; and

Fifth, health effects of automobile pollution alone cause 4,000 deaths per year and 4 million illness restricted days per year.

The Nation still experiences the problems which led Congress to adopt the firm approach of the 1970 amendments.

In the summer of 1975, the State of Iowa experienced its first air pollution alert.

In the summer of 1975, the Washington, D.C., area suffered its highest recorded single-day level of photochemical smog in history. The 8-day alert was the area's second longest ever.

A study released in August of 1975 by the Environmental Protection Agency reported that in small towns in Maryland, Ohio, and Pennsylvania, air quality standards are exceeded about 50 percent of the time. On the basis of these studies, the Administrator of the Environmental Protection Agency concluded that—

It may be necessary to expand to an areawide (multi-State) basis some of the pollution control measures now in effect only in urban areas.

The New York Times reported on November 20, 1975, that as many as 30 industrial plants in the Pittsburgh area cut back operations to alleviate emergency levels of air pollution which were the highest concentrations ever recorded in Allegheny County since the establishment of its monitoring system in 1971. An alert is called when the air quality index reaches 100; the readings from November 17 through 20 reached 249.

The Environmental Protection Agency has determined that at least 14 excess deaths occurred during the 4-day episode, as a result of the emergency particulate levels. In addition, hospitals received increased complaints of headaches, choking, and stinging eyes. Those with respiratory ailments, pregnant women, and infants were warned to stay indoors.

This situation closely parallels the 1948 Donora, Pa., episode during which 20 persons died and nearly half of the area's 13,839 residents became ill. Both incidents provide a striking example of the continuing problems that remain in achieving healthful air in this country.

The continuing smog in the Los Angeles, Calif., basin provides evidence that once air pollution levels are allowed to rise, extreme efforts are required to reverse such conditions.

At the same time, the pollution control requirements required by the Clean Air Act and other environmental statutes provide new jobs. At a time when the economy has 7.5 percent of the work force unemployed, additional expenditures required by Federal regulations create jobs. The effect will be to hire workers who would otherwise remain on unemployment compensation.

Statistics of the employment produced by pollution control programs have been collected by the Council on Environmental Quality. CEQ concluded from these studies that "over 1 million jobs were associated with air and water pollution programs last year." This analysis indicates that \$1 billion generates 70,000 jobs directly and indirectly. Some estimates place the employment impact as high as 82,000 jobs per \$1 billion.

Other studies estimating the overall impact of air and water pollution control requirements have indicated that impact on inflation will be minimal, and the impact on economic growth and unemployment will be positive. A study done by Chase Econometric Associates in January 1975 indicates that when averaged over the decade ending in 1982, the Consumer Price Index will have risen only two-tenths of 1 percent because of pollution control expenditures.

The gross national product was 1.6 percent higher in 1975 due to pollution control expenditures. The effect is projected to diminish by 1982, when the gross national product will be virtually unaffected. The net effect of pollution control expenditures is characterized in the Chase econometric report as being "rather modest." While some specific companies and facilities may have substantial costs, it is useful to place such individual costs against the more comprehensive background supplied by the Chase econometric study. As further background on the employment aspects of these expenditures, the appendices contain a February 1976 report entitled "Pollution Control and Employment" prepared by the Council on Environmental Quality.

The basis of the Clean Air Act remains valid. Poor air quality still effects the health of millions of Americans. Cleanup efforts are reversing these conditions, the air quality goals have been reconfirmed by panels of experts, and the positive economic impact has been demonstrated.

The challenges to the premises of the act have been limited, but there has been a campaign to eliminate the regulatory and enforcement tools necessary to achieve those public policy objectives.

The bill before the Senate reflects these conflicting pressures. For example, we voted to give cities more time—more time to utilize new transportation modes—to improve existing public transit systems—to provide transportation alternatives. We had to do this because the problem of auto pollutants is far worse than we envisaged in 1970 and control is elusive.

At the same time, we voted to give the auto industry 2 more years to achieve statutory standards—2 years to overcome technical problems—to begin to deal with the fuel economy problem—and to recover from the economic troubles of 1974–75.

I had hoped that we would not have to give the auto industry that much time—that they could have produced some clean cars in 1978—that we would have had an opportunity to test out new technology for a couple of years before it was required across the board. But that approach did not prevail.

We also revised the enforcement sections of the act—revisions which are encouraging. We voted to provide more time for stationary sources to achieve applicable emission limits. But, in return for a new outside deadline of January 1, 1979, which for some polluters is only an 18-month extension, we have proposed two new penalty features.

The most difficult issue which the committee was asked to resolve was the question of nondegradation. As I have indicated, this controversy involves the extent to which national policy requires protection of air quality in clean air areas. This policy was an essential element of the Air Quality Act of 1967.

This year the committee voted to make specific the requirement that clear air areas be protected. We determined that each new major plant should be required to use the best pollution control technology available and that the impact of each new plant's emissions should be evaluated against a national nondegradation standard.

The committee confirmed that new air pollution sources have a special responsibility to preserve air quality values, both to avoid a repetition of the past air pollution mistakes that now plague our urban areas and protect the capacity of our clean air resource to provide margins for future growth.

This decision was a victory for environmental quality. It comes at a time when Congress is being asked to sacrifice environmental initiative for economic recovery even though there is little demonstrable relationship between the two.

The members of the committee heard allegations that the Clean Air Act and other environmental legislation pose unacceptable limits on this country's capacity to grow. The committee examined these allegations and found them false.

I would like the record to show that an economic growth policy which abandons environmental objectives would be a foolish course. The Nation must have clean growth. The studies conducted by the Environmental Protection Agency indicate that adequately controlled facilities of all industrial categories can meet the nondegradation requirements in these amendments.

If the price of clean growth, however, is to restrain the size of particular activities pending the development of new pollution control technologies or new production procedures, then new technologies and processes can and will be developed in order to take advantage of the economies of scale. A great nation's growth cannot be measured only in terms of new production capacity; it will ultimately be measured by how well growth preserves the quality of areas people cherish.

Conversely, if environmental objectives are abandoned simply to accommodate the economies of scale, new pollution control technologies will not be developed, and the result will be environmental chaos. The effect of failure to take account of the environmental implications of future growth is well demonstrated in the table entitled "Added Emissions Over 1975." [See exhibit 1.]

This table shows that, if electric generating capacity increases at a rate of 6 percent per annum and new fossil fuel-fired power plants only meet EPA's new source emission performance standards, there will be an additional 7 million tons of sulfur oxides actually discharged to the atmosphere each year.

Even with a more moderate growth rate of 4.8 percent per annum, there will be an increase in emissions of 5 million tons of sulfur oxides per year between now and 1990, again assuming that only new source performance standards are required. If the States act aggressively to require more strict control, then added emissions of sulfur oxides can be less than 3 million tons per year.

I underscore this point. Even if the most moderate growth rate is projected and even if the States are most aggressive in the application of technological requirements as allowed by the committee bill, there will still be an increase of 2.8 million tons per year of sulfur oxides to the atmosphere nationally.

The second part of this table which relates to nitrogen oxides indicates similar trends, though in that table we have had to factor in the implications of various auto emission control strategies.

I only note that there is but a small increase in the emissions of  $\text{NO}_x$  when new statutory  $\text{NO}_x$  standards for automobiles in this bill are compared with the old standards. But, if the President's proposed freeze at 1976  $\text{NO}_x$  standards was adopted, there would be 23 million additional tons per year.

However, a combination of 1 gram per mile auto  $\text{NO}_x$  standard proposed in this bill and an effective stationary source control program would limit the addition of oxides of nitrogen emissions to 9 million tons per year by 1990. Without controls required by this bill and if the administration's 5-year moratorium had been followed, the gross increase would have exceeded 25 million tons per year. Emissions in 1990 would be more than double their present level.

These projections show that, under almost any level of expected growth, the Nation will face increasing emissions of sulfur oxides, nitrogen oxides, and other pollutants. Thus, it is essential to select a strategy that reduces the increase as much as possible. If we have learned anything from our environmental effort to date, I would hope at least that we have learned that we have to achieve a net reduction in gross national emissions to the atmosphere as soon as possible.

Application of the best available control technology is a strategy that can do this. As incorporated in this bill, prevention of significant deterioration and application of best available control technology combine to provide a strategy which will leave room for future growth and thus to facilitate growth, not a strategy to limit growth.

The environmental effects of air pollution will be discussed in more detail later; however, the facts on the record clearly suggest that subtle and irrevocable changes are being made in man's basic life support system as the result of uncontrolled dispersion of pollutants into the environment. Almost without exception, research into the effects of dispersal of these pollutants has given us more, rather than less, evidence of adverse effects. To ignore these problems because they are not fully understood is to court catastrophe.

The National Academy of Sciences report of March 1975 concluded that controls to avoid such broad adverse effects are justified. It only

takes one disaster of the scope of the current "Kepone" crisis to demonstrate that environmental damage once done may be irreversible.

Clearly, the burden of environmental protection should rest with those who use environmental resources. The cost of control ought to be borne by those who produce the problem. The polluter should bear the responsibility to show that use of the environment for dispersal of wastes is free from risk.

The structure of these amendments supports these objectives. Let me discuss some specific issues regarding the committee bill.

## II. NONDEGRADATION

A nondegradation policy was articulated first in Federal water pollution law. That was in 1965. The concept was incorporated in the 1967 Air Quality Act, which stated that a basic purpose of the act was to "protect and enhance the quality of the Nation's air resources." Guidelines to prevent degradation of clear air were issued in 1969. The statutory basis for those guidelines was not altered by the 1970 Clean Air Amendments.

In 1971, EPA proposed new guidelines to prevent significant deterioration for air quality implementation plans, but this requirement was deleted before final guidelines were promulgated. A court challenge followed.

On June 2, 1972, the U.S. District Court for the District of Columbia upheld the interpretation given by the 1969 guidelines that the Clean Air Act required protection of clean air in addition to enhancement of air quality in dirty air regions. That action was upheld by the circuit court of appeals and affirmed by the Supreme Court on June 11, 1973.

EPA promulgated regulations to prevent significant deterioration in December 1974. These were promptly challenged in court by industry and environmental groups.

During hearings in 1973, 1974, and 1975, the committee was urged to clarify and resolve this issue through legislation rather than leaving the matter to the courts.

In July 1973, National Coal Association President Carl Bagge testified:

This is far too significant an issue to be determined, as it has been thus far, on narrow legal grounds by the judiciary. Its economic and social implications are so broad that it cannot and should not be determined by an independent regulatory agency in a rulemaking proceeding as has been proposed. This is an issue which can only be resolved if we seek to achieve a common commitment which is responsive to our national goals, by the Congress of the United States. For this is truly a political issue of such importance that it must be resolved in the political crucible. Only then can it be examined and deliberated on by the entire range of national interests as represented in our legislative process. The fundamental issues raised by today's inquiry demand no less.

On behalf of the American Petroleum Institute, Howard Hardesty testified:

It is the Institute's conviction that unless this issue is quickly and intelligently resolved, efforts to strengthen our economy and develop a stronger domestic energy base will be stymied.

This bill attempts to respond to the appeals of these and other witnesses. The committee unanimously agreed as to the importance of

preventing significant deterioration of air quality in clean air areas. The committee also unanimously agreed that the prevention of deterioration of clean air areas should be resolved by the Congress and not by the courts. Having reached these conclusions, the committee worked for many months to develop a consensus regarding the most useful method for prevention of deterioration.

The provisions in the bill:

First, place primary responsibility and authority with the States, backed by the Federal Government;

Second, apply only to new major emitting facilities, not affecting existing facilities; [Sec. 169]

Third, require that large new sources use the best available technology to minimize emissions, determined by each State on a case-by-case basis; [Sec. 165(a)(4)]

Fourth, provide a margin of safety to protect national ambient air quality standards, assuring prudent consideration of any major emitting facility that may threaten that air quality;

Fifth, require the Federal Government, as a property owner, to protect the values related to air quality on certain Federal lands under the stewardship of various Federal agencies;

Sixth, eliminate the so-called buffer zones that were hypothesized around various land classifications;

Seventh, affect only those areas where air quality is cleaner than the present primary or secondary standards;

Eighth, establish a permit process, managed by the State, which is included in an analysis of the air quality impact of new major emitting facilities; [Sec. 165(a)]

Ninth, require that the permit application should include data on background air quality and potential associated growth in order to better understand the overall air quality implications of the new facility; [Sec. 165(a)(3)(B)] and

Tenth, establish that there should be a nationally applicable maximum level of change in the air quality of clean air regions—the so-called class II increments—which would be a measure in the change in air quality permitted in any given area as a result of the operation of one or more new major emitting facilities.

The committee bill requires each State to identify the air quality of existing air quality control regions or portions thereof for each pollutant. The States must submit this information to the Administrator within 4 months.

The regional designation of ambient levels of each regulated pollutant is preliminary to all States regulatory programs. It is therefore essential that the identification process proceed in the timely fashion required by the Senate bill.

If the air quality levels of a region or portion of it exceed the primary standard for a mobile source related pollutant, that is, carbon monoxide, nitrogen dioxide or photochemical oxidant, it is subject to the requirements for nonattainment areas, which may include transportation control planning under existing section 110, as amended by section 5 of the committee bill.

Similarly, a State in which a region or portion of it has attained the primary or secondary standard for either sulfur oxides or particulates will be subject to applicable nonattainment strategies.

An area in which air quality levels for sulfur oxides or particulates are better than the ambient standards would be subject to the non-degradation process of the bill—section 6. The State would be required to adopt and enforce as part of its implementation plan provisions to prevent significant deterioration of air quality.

For the most part, there is sufficient information available to determine which air quality control requirements apply to which portions of each State. In the absence of information to the contrary, a region would be assumed clean and thus subject to the significant deterioration provisions.

The bill's procedures to prevent significant deterioration apply only to new major emitting facilities and do not affect existing facilities or new facilities which are not specified as major by this bill or subsequent EPA regulations.

Major emitting facilities are only those 29 industrial sources identified by category in the statute—or later identified by EPA—and which have the potential to emit more than 100 tons of a pollutant per year. These do not include houses, dairies, farms, highways, hospitals, schools, grocery stores, and other such sources. [Sec. 169(i)]

Just as sources in class II areas must be reviewed to assure that emissions do not cause or contribute to significant deterioration in class I areas, sources in other areas must be reviewed to assure that they do not cause or contribute to significant deterioration in nondegradation areas.

The Federal role is sharply restricted in implementing this policy. The Environmental Protection Agency has responsibility to: First, approve the new source review process established by the State; second, seek injunctive relief or other judicial relief as necessary to prevent the issuance of a permit for a new source if it does not comply with the specific statutory requirements related to significant deterioration; third, resolve interstate disputes; and fourth, notify appropriate Federal land managers when an adverse impact may occur in a class I area. Once the State adopts a permit process in compliance with this provision, the Environmental Protection Agency role is to seek injunctive or other judicial relief to assure compliance with the law.

Much confusion has been generated about so-called "buffer zones" that encircle class I regions. This bill eliminates the inflexibility of current EPA regulations by establishing the class I increments solely as a means of determining where the burden of proof should lie as to adverse impact on air quality values. Like the class II numbers, the class I increments are an index of the change in air quality. They do not, in any way, establish a final basis for approval or disapproval of a permit application. Thus, any maps which describe buffer zones as a result of the Senate bill distort the impact of these amendments.

Decisions regarding each new facility will be made by a State depending on the information presented in each permit application. Whether or not there is a Federal interest related to class I areas will be established on a case-by-case basis. The decisions which the Federal land manager and the States make as a result of the analysis of impact on class I areas and the extent to which any parties appeal the results of the class I increment test and the decisions reached during such an appeal are flexible. I repeat: There are no arbitrary buffer zones.

If the Federal land manager certifies that the air quality values of the class I areas in question will not be adversely affected by sulfur dioxide or particulate emissions from a new major emitting facility, the source can be given approval to build even if the class I increments would be exceeded. Conversely, if the Federal land manager convinces the State that the air quality-related values would be adversely affected, the States must deny approval even if the class I increments would not be exceeded [Sec. 165(c)]

This approach is flexible. It provides a basis for determining the air quality values of Federal lands which are to be protected. And it requires a balancing judgment to be made on a case-by-case basis.

The committee did not extend the use of nondegradation increments to pollutants other than sulfur oxides or particulates. The lack of adequate information on the implications of covering other criteria pollutants precluded such a requirement. The committee did, however, agree that the best available control technology requirements should be applicable to all pollutants emitted from any new major emitting facility so that the maximum degree of emission reduction would be achieved in order to minimize potential deterioration. And the committee did authorize a study by EPA of increments applicable to other pollutants in order to establish a basis for future congressional action.

Again, I refer my colleagues to the tables, with particular reference to the table entitled "Added Emissions Over 1975." These statistics show various air pollution trends under differing growth and control technology assumptions. (See exhibit 1.)

One purpose of the committee provision to prevent significant deterioration is to try to reverse the current trend in air pollution. The lower segment of this chart which shows oxides of nitrogen trends is particularly interesting.

Under the nondegradation provision, each new facility in a nondegradation area is required to comply with the best available control technology for all pollutants emitted. This is critical if the growth trend for oxides of nitrogen is to be slowed. Current new source performance standards for power plant NO<sub>x</sub> emissions are inadequate. For many other industries, standards do not even exist. As the chart shows, virtually any set of assumptions which relies on current new source standards for NO<sub>x</sub> results in a significant increase in total national emissions.

Conversely, in combination with aggressive auto controls, the application of best available control technology for oxides of nitrogen can begin to restrain the upward trend in emissions.

These charts indicate the importance of an effective nondegradation provision. Although total emissions of sulfur oxides have declined about 15 percent between 1970 and 1974 as reported by the Council on Environmental Quality, analysis of future trends shows that this decline will soon be reversed.

This chart shows that emissions will climb again as the number of new stationary sources grows. Although it will be difficult to make progress, we can and must at least minimize the increase. If the States insist on the best available control technology instead of being satisfied with the inadequate new source performance standards for sulfur oxides, there can be 3.2 million fewer tons of sulfur oxides in 1990, even in the high growth scenario.

There were numerous other issues associated with nondegradation which are important to an understanding of this legislation.

#### ENVIRONMENTAL IMPLICATIONS

The nondegradation provision provides needed environmental protection which the existing ambient air quality standards do not provide. If the national secondary ambient air quality standards were revised to protect against these damages, achievement of the secondary standards in dirty air areas would be extremely difficult.

Secondary standards were envisioned as a goal for clean-up of dirty air areas. They were intended to identify the degree to which pollution needed to be reduced to stop damage to crops, household plants, buildings, and general esthetic deterioration.

Secondary standards as promulgated did not address ecological and esthetic values. EPA apparently assumed that if secondary standards had been established to protect these values, their achievement in dirty air areas would have been virtually impossible in any reasonable time frame.

The nondegradation provision is intended to provide protection against harmful environmental effects not anticipated by secondary standards and to assure that a single, new major emitting facility will not consume the entire regional air resource thus barring any future growth.

For example, if the secondary standards were the only restraint on new sources in clean air regions, visibility which is now 100 miles or more in some areas could deteriorate to 12 miles. If humidity is high, visibility would be reduced even further. While visibility may not be important in dirty air areas, it has high public value in many clean air regions and should have been protected by secondary standards.

Another example of the inadequacy of secondary standards is the increasing number of studies indicating that pollutants are transported for much greater distances than previously thought. This means that emissions from sources in rural areas contribute to urban pollution problems and vice versa. In its report to the Senate Public Works Committee of March 1975, the National Academy of Sciences expressed concern that emissions as far away as 300 miles could contribute to unhealthy air in major cities.

Sulfur oxides and nitrogen oxides increasingly are returning to the ground in the form of acid rain which damages valuable water and soil resources. A conference was held in the summer of 1975 in Columbus, Ohio, where many scientists expressed concern over this impact. Norway has experienced a substantial decline in its fishery resources which has been attributed to acid rain. A 20-year study in Scandinavia indicates that acid rain has killed fish and caused an ecological change. Forest growth and yield have declined. Fish populations have been adversely affected by acid rain in 75 percent of the high elevation lakes of the Adirondack Mountains.

Pollution at less than the concentrations accepted by the national secondary standards has been proved to damage vegetation. Acute injury to spruce trees has been reported when average concentrations of sulfur dioxide were only two-thirds the level allowed by the ambient secondary standards. Studies indicate that other crops are also dam-

aged at concentrations less than the secondary standards, including wheat, potatoes, spinach, apples, and white pine.

Exposure to low-level concentrations of pollutants has health effects. Studies done in Japan since the establishment of the primary standards in the United States indicate that air pollution concentrations lower than the national standards cause increases in reported illnesses. The National Cancer Institute estimates that 60 to 90 percent of cancer is environmentally caused. The ambient standards as presently established do not include consideration of these facts.

The nondegradation amendment is intended to help reduce overall emissions and thus provide protection against these kinds of adverse impacts.

#### TECHNOLOGICAL IMPLICATIONS

One of the cornerstones of a policy to keep clean air areas clean is to require that new sources use the best technology available to clean up pollution. It is important to assure that new, improved technology is applied as it is developed. And it is important to provide incentives to improve pollution control systems.

To encourage this result, the bill requires the use of pollution control systems which achieve the maximum degree of continuous emission reduction, determined by the States on a case-by-case basis. The States are authorized to take into account energy, environmental, and economic impacts and other costs in reaching their determination. Such an approach should provide greater emission reductions and allow more rapid application of improved technology than would otherwise occur through uniform application of the new source performance standards periodically promulgated—and seldom changed—by the Environmental Protection Agency.

The record to date under the new source performance standards approach has been disappointing. The most glaring example occurs in the control of coal-fired powerplants—the largest and fastest growing stationary source of sulfur oxides and particulates. The inadequacy of these standards is exemplified by the fact that pollution control for particulates achieved at the Four Corners powerplant in New Mexico is already 14 times cleaner than required by the new source performance standards promulgated by EPA. In addition, the new San Juan plant in New Mexico, scheduled to begin operation in 1977, is expected to achieve cleanup of particulates which is 30 times better than required under EPA's new source performance standards. These facts were presented in our hearings last April. For sulfur oxides, the San Juan plant is expected to be almost 10 times cleaner than required by EPA's new source performance standards.

Because of the gap that exists between actual "best available technology" and what has been required under new source performance standards, individual States have established emission limits which exceed the new source performance standards of sulfur dioxide which are more restrictive by an order of magnitude.

At present there are only 18 source categories for which new source performance standards have been promulgated—less than half of the biggest sources that should be covered. Though some of these were promulgated as long ago as 1971, none have been revised to take into account improved technology which has been developed, and only one is under active consideration for such a revision.

Much of the advancement of pollution control technology has occurred at new plants located in clean air regions. This has been due to the efforts of States interested in preserving clean air. The Federal standards, on the other hand, were based upon burning poor quality coal with stack gas cleaning. While this may be necessary in areas where dirty coal will be used, it is certainly not an adequate basis for national policy. In addition, although cleaner coal is burned in many areas, the impacts of resulting emissions are still substantial.

A typical new 1,000 megawatt coal-fired powerplant using clean coal and no control technology for sulfur oxides emits 144 tons per day when operating at full load. When controlled with technology currently being used today, these emissions can be reduced to 14 tons per day.

In some cases the new source standards mean that requiring the "best technology" will result in no improvement in emission control at all—a disappointing result from a requirement which was designed to maximize the protection of air resources and minimize the need to retrofit facilities in the future.

One objection which has been raised to requiring the use of the best available pollution control technology is that a technology demonstrated to be applicable in one area of the country is not applicable at a new facility in another area because of differences in feedstock material, plant configuration, or other reasons. For this and other reasons, the committee voted to permit emission limits based on best available technology on a case-by-case judgment at the State level. This flexibility should allow such differences to be accommodated and still maximize the use of improved technology.

Reliability of new pollution control technologies has also been challenged, particularly against sulfur oxides emission control systems.

At an EPA symposium on scrubber development in March of 1976, it was reported that 109 flue-gas desulfurization systems with a rating of 42,000 megawatts are either operational, under construction, or planned in the United States. The efficiency of these systems in removing sulfur dioxide was reportedly to be in the range of 80 to 90 percent. Although the older systems did have problems, developments have reached the stage where these systems are clearly a viable means of pollution control. And evidence available to the Environmental Protection Agency and the committee indicates that sulfur oxide control systems are, in fact, more reliable than electric generating equipment.

#### ECONOMIC IMPLICATIONS

The economic objections raised against the nondegradation provisions are not new. They are restatements of old arguments used by industry against other attempts to improve the lives of Americans.

When we fought for improved wages for workers, industry said that they could not afford it.

Now when we are fighting for an improved environment, industry says that it cannot afford it.

The table on projected capital investment for selected major industries through 1985 shows that the added capital investment required for pollution control is modest. And if expenditure of an additional 2.3 to 2.6 percent—the maximum estimated by an FEA-EPA study

of the various significant deterioration policies being considered by the Congress—is required, it is not an unreasonable price to assure that air quality in clean air areas remains clean. Not only would such an investment protect the public against the long-term ecological impacts of increasing levels of overall pollution, but also such a policy would reduce public exposure to low levels of pollutants which may lead to chronic health effects.

The FEA study found that total operating costs for powerplants, including air pollution controls through 1990, would be \$1.335 trillion. The Senate nondegradation provision could add a maximum \$16.5 billion or 1.1 percent to operating costs if the States insisted on the use of the best and most expensive pollution control systems. The minimum increase would be zero, using new source performance standards, if States could justify such modest efforts. The actual cost would obviously be somewhere in between.

The impact on the consumer, in both direct costs and indirect costs attributable to the increased prices for goods manufactured through the use of electricity, would be modest. Again, if the States require the most stringent levels of control and expensive techniques, the maximum consumer cost would be \$2.33 or 2.3 percent additional costs per month during the year showing the greatest cost.

The direct impact on consumers in electric bills would, under the most rigorous scenario, be \$1.17 per month additional cost in the year 1990. This is approximately a 1.1-percent increase.

Some opposition to meeting stringent environmental goals is based on a desire to balance these goals against the cost of installing pollution control equipment. This is a distorted view of economics. It places the cost of pollution on those who receive the damage: the asthmatic who has more attacks, the child who has bronchitis or a more serious respiratory disease, and the farmer whose crops yield less. These people are now bearing the costs of air pollution.

According to the National Academy of Sciences, a single large source such as a powerplant may cause \$20 million to \$50 million in pollution-related costs per year.

Another important economic question relating to nondegradation policy is the impact on national coal development—and the goal of energy independence.

There is a great deal of justifiable concern about potential decline in the use of eastern and midwestern high sulfur coal. The EPA/FEA analysis indicates that the nondegradation requirements would have a beneficial effect for the marketing of eastern and midwestern coal.

The report concludes that many plants, especially those in the Midwest which formerly were planning to import oil or rely on western low sulfur coal in order to meet the requirements of the Clean Air Act, will find it more economical to blend local medium sulfur coal with high sulfur coal and install a scrubber. As a result of the Senate control technology requirements, the demand for western coal—or Mideast oil—would be reduced by 35 million tons or by 5 percent—a demand which would be filled by eastern high sulfur coal and stack gas cleaning equipment or new clean fuels techniques.

Some additional costs may result from the disposal of captured pollutants. These captured byproducts—sludge—which would otherwise be dispersed in the air, can be treated to reduce volume substantially. And there are regenerable sulfur oxide control processes which yield

no sludge, other than would normally result from reduced dispersal of pollutants to the atmosphere. In any case, the amount of sludge—captured pollutants—need be little more than the amount of ash which has been disposed of by powerplants for many years.

Some low-sulfur coals presently being burned actually result in three times the amount of ash produced compared to eastern high sulfur-high Btu coal. Treated sludge, on the other hand, can reduce the volume of ash and sludge combined by approximately 50 percent and can be used as landfill and building materials.

#### ENERGY IMPLICATIONS

In many cases, the use of the best available new processes will yield significant pollution reduction and also conserve energy. The adoption of hydrometallurgical processes to replace smelting techniques in the copper industry is yielding pollution reduction approaching 100 percent. New papermill processes for burning pulping liquors will provide half the steam to run the mill. A new paper mill evaporator recently developed eliminates odors and saves 200,000 barrels of oil per year.

Coating processes using volatile solvents that contribute to smog are being replaced by water-based, ultraviolet, or dry processes which are solvent-free.

The use of best available control technology as add-on devices may increase energy consumption. But these increases are expected to be modest. Flue gas desulfurization systems for powerplants use approximately 3 percent of the capacity of the plant. For example, according to available data, the energy demand of a scrubber system for an 800-megawatt powerplant is roughly equivalent to the energy demand to mine the coal for that plant. And the energy used is not foreign energy—it is domestic coal.

An EPA study of costs of nondegradation policies indicates that the maximum energy penalty associated with the operation of pollution control equipment at new powerplants would be modest: only 0.8 percent in 1990.

If all new powerplants between now and 1990 were equipped with stack gas cleaning devices, the energy needed to operate these cleaning devices could be generated without the addition of any new capacity if existing plants were to increase their actual generation by 1 percent capacity over their present performance.

The present performance of coal-fired powerplants is approximately 65 percent of capacity; for nuclear plants the performance is 59 percent capacity. Clearly, priority should be given to increasing the reliability of existing powerplants so that energy is available for public consumption and for the operation of pollution control equipment.

#### FEDERAL-STATE RELATIONSHIP

The States are assigned the lead role in implementing nondegradation policy. As I pointed out earlier, EPA is given a carefully defined role.

As important to the national controversy on significant deterioration is the role of the Federal Land Manager. These Federal officials are given a positive responsibility to assure protection of air quality values associated with the national parks and wildernesses and other

Federal lands which may become designated as class I areas. The Federal Land Manager will play an important role relative to emissions which have potential impact on these valuable areas.

Many national parks and wilderness areas have been set aside because of their extensive vistas, expansive scenic views, unique natural formations or primitive value. If pollution would impair such values, or if the existence of the plume or the discoloration which would be caused by a major emitting facility would detract from the values of a park or wilderness area, then the Federal Land Manager must act to try to prevent this damage.

The Federal Land Manager has a mandate to protect the air quality values of these areas. This bill requires the Federal Land Manager to be diligent in carrying out this new responsibility. [Sec. 165(d)(2)]

In most cases, the added pollution allowed by this act will still leave a cushion in clean air areas before the national health and welfare standards are exceeded. The States are expected to avoid using up this safety margin with pollution from nonmajor emitters.

This is an important admonition. If efforts are not made to control these sources before they begin to threaten health and welfare standards, there is great likelihood that those standards will, in fact, be exceeded. The patterns that create such pollution—such as sprawl requiring excessive transportation—will already be established. Reversal will be difficult if not impossible. Even if reversal is possible, unnecessary and undesirable deterioration of air quality would have occurred.

It would be of little value to have carefully reserved the option of States to make balancing judgments in relation to the degree of emission reduction beyond that required by the increments if, in the absence of careful consideration of non-major emitters, the growth capacity were frittered away.

### III. ENFORCEMENT AND PENALTIES ENFORCEMENT

The 1970 Clean Air Act established a deadline for achieving public health-related air quality standards. States were authorized to establish a "reasonable time" for achievement of secondary standards. The statutory deadline for primary standards was mid-1975 and 2 additional years available in areas with particularly difficult air pollution control problems. As the committee considered the current legislation, it became evident that for a variety of reasons, some sources would not meet the compliance schedules established pursuant to that act.

A substantial number of major emitting facilities remain out of compliance with emission limitations. Some States have not even adopted full State implementation plans. While substantial progress has been made in bringing many sources into final compliance, an improved mechanism must be established to handle sources presently not in compliance.

The committee recognizes that some of the facilities are in compliance and that other facilities are on compliance schedules. These sources deserve praise. They have made or committed investments. They have cleaned up their emissions or are in the process of cleaning up their emissions.

Such sources are faced with a competitive disadvantage associated with increased costs for pollution controls—costs not incurred by

sources either not on a schedule or not in compliance with a schedule. Those sources which have chosen to delay, avoid or litigate have, in fact, achieved economic advantage. Thus, the competitive health, as well as the public health, has been placed in danger. The committee bill attempts to correct this imbalance.

The nature of the problem is underscored by a review of the status of compliance with eight major categories of stationary sources. As the table entitled "Stationary Source Compliance," indicates, between one-third and two-thirds of stationary sources are in compliance or on compliance schedules and meeting those schedules.

However, this table shows that a large fraction of powerplants and industrial boilers—approximately 40 percent—are either not on schedule or not in compliance with the applicable schedule. Only 41 percent of Federal facilities are in compliance or are on schedule. Only 32 percent of the smelters and 35 percent of the steel mills are in compliance. These sources not in compliance in many cases represent the largest industries and the largest emitters within those industries.

#### DELAYED COMPLIANCE PENALTIES

The committee bill provides for delayed compliance orders and delayed compliance penalties as a new strategy to enforce applicable emission limitations and to address the problem of those existing-sources which are out of compliance. This provision allows a State or EPA to issue enforcement orders to sources not in compliance with applicable emission limitations. Such orders will require compliance as expeditiously as practicable but in no event later than January 1, 1979. [Sec. 120]

Sources which are presently on schedules extending beyond that date are operating under unauthorized extensions and are to have their schedules revised to meet that date. In order to enforce this provision, an automatic delayed compliance penalty is provided for sources which are not in compliance by January 1, 1979. The level of this penalty is intended to assure that no economic benefit will accrue to a facility that does not comply. [Sec. 113(d)]

The penalty will require monthly payments equal to the cost of compliance computed over a 10-year amortization period.

On the chart there is a category described as unknown. Included in this unknown category are plants where the emission standards are in litigation or where the compliance status otherwise cannot be precisely determined. It can be assumed in general that most of the plants in the unknown category require controls in order to meet the requirements of the Clean Air Act.

#### CIVIL PENALTIES [Sec. 113]

The committee bill also authorizes the Administrator to seek civil penalties for violation of emission limitations or schedules and time-tables of compliance. This authority is independent of the deadline extension and the delayed compliance penalty. If a State has not issued a delayed compliance order with a new time schedule, the Administrator is required to seek an injunction against the noncomplying source and is authorized to seek civil penalties for noncompliance. In

addition, the Administrator is authorized to seek additional penalties against sources which are subject to the delayed compliance penalty.

The principal purpose of the Clean Air Act is to protect the public health. The mere payment of an economic penalty required by the delayed compliance penalty provision should not be insulation against achieving requirements related to protection of public health. The purpose of the delayed compliance penalty is to create an adequate economic disincentive to achieve compliance at the earliest possible date. It is not intended to provide an opportunity for continued non-compliance. As an enforcement mechanism, the delayed compliance penalty should remove some of the burden on the Administrator to commit enforcement resources; but it should not reduce the responsibility for the Administrator to seek injunctive relief and penalties against noncomplying sources.

Finally, the delayed compliance penalty will give the courts an option which has not heretofore been available. When the courts determine the public health and welfare costs of plant closure are greater than the public health benefits to be achieved from strict adherence to compliance with emission limitations by the deadlines in the statute, the court may rely on a combination of delayed compliance penalty and civil penalties to equalize economic differences while maintaining momentum for compliance with the law.

#### IV. EXPANSION IN NATIONAL AMBIENT AIR QUALITY STANDARD AREAS [See Secs. 171-178]

Under present law, facilities that want to expand at their present location face a very stringent review test if they are located in areas where ambient standards are presently exceeded. In many cases, this means that under the law, expansion at that site is precluded until the ambient standard is attained.

The reported bill provides some new flexibility in this area, but it is carefully contained and strictly limited. The new amendment would allow expansion at an existing site if a new facility uses the best available control technology, if existing sources meet all applicable emission limitations, and if total cumulative emissions will be sufficiently less to represent reasonable progress toward attainment of the standards. Sources resisting compliance will now have an incentive to end that resistance, since the desire to expand at existing facilities is based upon the economics of industrial expansion.

It is, therefore, important to assure that all applicable emission limitations are met. The statutory language is quite clear. The amendment requires that all of the State requirements be met. These include limitations on visible emissions and opacity levels as well as all other types of emission limitations contained in the State requirements.

The bill language makes no distinction between emission limitations which relate to the primary standard and other emission limitations. Such a distinction is not authorized.

State implementation plans usually contain a unified set of requirements and frequently do not make distinctions between the controls needed to achieve one kind of ambient standard or another. To try to separate such emission limitations and make judgments as to which are necessary to achieving national ambient air quality standards

assumes a greater technical capability in relating emissions to ambient air quality than actually exists.

A Federal effort to inject a judgment of this kind would be an unreasonable intrusion into protected State authority. EPA's role is to determine whether or not a State's limitations are adequate and that State implementation plans are consistent with the statute. Even if a State adopts limits which may be stricter than EPA would require, EPA cannot second guess the State judgment and must enforce the approved State emission limit.

In fact, in many areas where this provision will be used, such as steel facilities, it is highly possible that even when all applicable emission limitations contained in the State implementation plan have been met, the ambient standard may still be exceeded. This is particularly true where both opacity limitations and limitations on visible emissions are used as a means of enforcing emissions reductions to attain ambient standards. Any attempt to make a distinction between emission limitations on this basis would, in all likelihood, have the effect of undermining pollution control efforts at such facilities. That is one reason the statutory language makes no such distinction.

A key aspect of the amendment allowing such expansion is the requirement that reasonable further progress toward attainment of the standard must result from the new scheme. The committee report says that:

Where . . . there is nothing further which can be done to move toward the ambient air quality standards, the State may take into account progress already made in determining reasonable further progress.

The test of "nothing further" is to be interpreted strictly. This means that further control of existing facilities, development of further production process controls, and new innovative control techniques must be applied on all sources, including all "fugitive" emissions, before the condition of "nothing further" is met. It is also the intent that "reasonable further progress" means pollution control will reduce emissions at a rate that will lead to attainment of the ambient standards in the near future.

#### V. TRANSPORTATION AND LAND USE CONTROLS

Transportation and land use controls were authorized as air pollution control mechanisms by the 1970 act. The Congress recognized that air pollution problems of many urban centers were the cumulative result of development patterns encouraged and sustained by the private use of automobiles.

We knew in 1970 that air pollution problems were extensive in many areas and would require the use of these controls in ways that could require substantial changes. The Senate report in 1970 said this:

Land use policies must be developed to prevent location of facilities which are not compatible with implementation of national standards.

Transportation policies must be developed or improved to assure that the impact of pollution from existing moving sources is reduced to the minimum compatible with the needs of each region. Construction of urban highways and freeways may be required to take second place to rapid and mass transit and other public transportation systems. Central city use of motor vehicles may have to be restricted.

When carried out properly, such controls are a positive tool. The requirements of the 1970 act could have been the stimulus for beneficial uses of land and transportation in environmentally compatible ways.

This opportunity was not seized. The Administrator initially allowed States to put aside development of transportation control plans. That action was overruled by the U.S. Court of Appeals for the District of Columbia on January 31, 1973. States adversely affected by mobile source-related pollutants were required to develop and submit transportation control plans which provided for the achievement of primary ambient air quality standards no later than 1977, the final date in the statute. This belated effort to require transportation controls and land use regulations to prevent further deterioration in air quality resulted in many EPA promulgations in the absence of adequate State action. This caused a furor.

In addition, the limited time available for submission of plans, the controversial nature of many of the measures contained in the plans, and the magnitude of the pollution problem in many metropolitan areas made this task extremely difficult.

In order to adjust the transportation control requirements to the difficulties of implementing such policies, the committee has adopted an amendment which provides more flexibility, more local involvement, more time, and more State discretion in fashioning these strategies. The bill requires the adoption as rapidly as practicable of all reasonable transportation control measures in areas where such measures are necessary.

Under the 1976 amendments, the States will establish and the Administrator will approve designation of areas which fall under four different classifications. The first classification will be areas where transportation control plans will be required. The second and third categories are covered by section 110(e) of existing law and the last category will be nondegradation areas.

If an area is implementing transportation control measures and all requirements for stationary sources that emit mobile source-related pollutants, but still cannot meet the deadline, it may receive a 5-year extension to achieve primary standards for the applicable mobile source-related pollutant. A second 5-year extension is available for the few most difficult problem areas. This means that deadlines could extend to May 31, 1987.

States are required to involve local communities in the selection of strategies contained in transportation control plans.

The key tests are that all reasonable requirements are contained in the plan and are implemented as expeditiously as practicable. If the State plan does not meet these tests, the Administrator shall promulgate an implementation plan for the area after consultation with State and local elected officials.

A new provision would allow the States to apply to the courts for a stay of any provision of such an EPA promulgated plan, pending review of that plan in the courts. Grants of 100-percent funding are available to local planning organization to help implement this provision.

In order to assure that this new flexibility and additional time are used effectively, the Administrator of EPA is required to withhold

EPA funds for projects after June 1, 1977, in States where an extension of the transportation control plan is required but has not been requested.

In the event that a State, or region, does not implement the requirements of an approved plan, the Administrator is required to decrease by 15 percent annually the EPA funds for any project in the region in question. Other Federal agencies must assure that the funds provided for federally approved projects are expended so as to conform with approved transportation control plan requirements.

Adjusting the Clean Air Act to provide a more acceptable plan of implementing transportation controls was frustrating. The committee recognized that relaxation of deadlines would cause millions of people to be exposed to unhealthy levels of air pollution. Yet, to continue with the present deadlines could create equally unacceptable adverse public health and welfare implications.

The committee action is a compromise assuring that reasonableness will guide transportation control strategies. Further relaxation would not provide adequate public health protection at any early enough date. Any further compromise of transportation control requirements would allow unhealthy levels of pollution in cities for far too long.

The selection of measures to be used is to be made initially by State and local governments. The bill does not specify the "reasonable measures" to be adopted. However, the Administrator cannot reject any measure selected at the State or local level because he considers it to be unreasonable. If it is adopted by the State or regional agency, then it is reasonable.

Conversely, the Administrator may determine that all reasonable measures have not been adopted. In this case the Administrator is required to promulgate additional reasonable measures. The court will ultimately rule on any disagreement between the affected State or local agency and the Administrator as to the reasonableness of an EPA proposal.

The definition of what is a reasonable measure will relate to the adverse social and economic impact that would occur through its use.

While it is not possible to completely define this concept, it is possible to provide some boundaries. The adverse impact must be widespread and general. It must also be of sufficient duration to cause substantial difficulties. Some dislocation and disruption frequently occurs during the beginning stages of any control program or any change in transportation patterns. This interim impact is not justification for ruling that a measure is unreasonable. The adverse impact must be of a continuing nature. The difficulties that initially occur during the transition period during implementation of strategies are not sufficient to meet this test.

The committee bill injects additional flexibility into the initial planning process by requiring local involvement in the development of transportation control plans at the outset, with a more limited EPA role throughout. We have shifted much of the burden to the States and localities in an effort to overcome past failures.

Many of the transportation control plans now in existence for communities have been tested in the courts. It is not the intent of these new amendments to interfere with or void any requirements which have been upheld by the courts.

The Administrator will be receiving applications for extensions which will call for his action prior to the publication of the information documents required by these new amendments. In such cases, the Administrator is not required to wait for the publication of the information documents. Information has been gathered over the last 4 years on transportation control measures. That information will serve as the basis for the Administrator's decision until it is replaced by the new information documents.

The plans submitted by States must be reviewed by the Administrator under section 110(a) of existing law. This means that the Administrator must review and approve or disapprove transportation control plans within 4 months after submittal. In addition, the June 1978 date for submission of new plans is an outside date. The Administrator may seek earlier submission where it is appropriate. This authority is to be exercised only where processes are already underway which would make an earlier submission more appropriate.

For example, the January 1976, letter received by the committee from the Environmental Protection Agency during consideration of these amendments indicated that transportation control plans were under development in nine cities where such plans were not previously required. All of these cities received notice of the need for action in 1973. The data which has been developed to justify the provisions contained in such plans would be obsolete and would have to be gathered again if submission of control plans is not required prior to 1978.

#### LAND USE [See Sec. 110(a)(5)]

The reported bill revises the basis on which land use controls are to be used to assure that land use decisions be made at the local level. The 1976 amendments place EPA's authority to promulgate land use regulations in a new perspective. Land use questions are to be resolved at the State and local level. Federal action is to occur only when the State fails to act or there is a demonstrated inadequacy in the State program to achieve or maintain a health-related level of clean air.

Even this restricted authority does not extend to land use planning in any conventional sense. While EPA may require land use controls for maintenance of primary air quality standards or for prevention of further deterioration from such standards, this authority only applies in the absence of appropriate State action. It does not require Federal planning. At most, the Federal role will be limited to an examination of the air quality impact of a particular site location decision.

The Administrator is required to consider the potential energy, environmental, and economic impact of such controls prior to their imposition. This is new guidance provided in the 1976 amendments. It does not affect the review of new stationary sources under the existing requirements of Section 110 of the present law.

These amendments provide the assurance that improper land use controls will not be authorized under the Clean Air Act. It also assures that proper land use controls can and must be used where necessary to protect public health. Specific decisions regarding construction of a facility must be reviewed to examine the associated effects of that facility. This is not a requirement for land use planning, but a requirement for examining the air quality impact of land use decisions. That is an important distinction.

## LONG-RUN BENEFITS

The proper design of communities and transportation systems can yield numerous benefits. In addition to significant air quality improvements, it can mean less money spent traveling because destination points are less scattered and more accessible. It can mean less commuting from home to office and thus less consumption of scarce energy. It can mean increased freedom for residents who have access to adequate public transportation. It can mean reduced costs for supplying sewer connections and other basic services.

A study conducted of the Washington, D.C. metropolitan area stresses that if new growth is directed to the areas where the new mass transit system is being constructed, the air pollution impact of new growth could be drastically reduced. Such action could yield a 50-percent reduction in the increased vehicle miles traveled projected for the Washington, D.C., area. The sober side of that calculation is that, unless such policies are encouraged, pollution in the area will be much worse than at present even with clean cars.

## VI. OTHER ISSUES

## EMISSION LIMITATIONS [Sec. 302(k)]

The 1970 clean air amendments included a requirement that State implementation plans impose "emission limitations." This term has been the subject of controversy, litigation, and dispute. These 1976 amendments provide a statutory definition of the phrase "emission limitation" to make clear the intent of the 1970 law—as upheld in numerous judicial decisions—that the basic strategy for implementation of air quality programs must be premised on continuous emissions control. Intermittent controls or dispersion techniques are unacceptable as a substitute for continuous control of pollutants under this act.

This clarification of existing law is grounded on these factors: First, intermittent control strategies are, as a practical matter, unenforceable by air pollution control agencies. Such strategies require elaborate monitoring and forecasting capability. Implementation relies on the polluter's ability to predict weather conditions and willingness to curtail production in response to those predictions. At the same time, few air pollution control agencies have the resources to police these strategies to assure that a polluter does in fact, curtail production on a timely basis. In addition, they can cause unacceptable disruptions in production and employment.

Russell Train recently summarized his Agency's position in this way:

In the area of ICS, we have determined that such methods are inherently unreliable and difficult to enforce. EPA's view has been supported by the Department of Commerce Technical Advisory Board which has found in its 1975 Report on Sulfur Oxide Control Technology that intermittent control systems create administrative and financial difficulties which could prevent effective enforcement. The report also states that under certain circumstances the costs of such a system would approach that of continuous emission control measures. The National Academy of Science has also supported the EPA position.

Without emission limitations there would be no fixed end point when compliance would be achieved. And, even if air quality standards were enforceable, it would have to be on a constant, continuous day-to-day

basis. There would be no basis for judging the performance of one source against another in regard to air quality effect in a multisource area because each source would have no specific, legally enforceable requirement to meet.

There would be no credible measure of air pollution control against which the public would judge the performance of the polluter. And, most important, there would be no legal basis against which to take an action if the polluter failed to perform. This is particularly true for citizen enforcement.

Mr. Benjamin Wake, administrator of the Division of Environmental Sciences of the Montana Department of Health and Environmental Sciences, stated to the Subcommittee on Environmental Pollution in April of 1975:

If it was the intent of the Congress, and I do not believe it was, to make the country uniformly dirty then the attaining of the national ambient air quality standards by use of the intermittent control system will achieve those ends in short order.

Second. Continuous emission reduction measures are available, they are reliable, and they are economically justified. Available measures for continuous emission reduction include use of fuels which are low in sulfur or ash, and techniques such as desulfurization of fuels, coal cleaning and washing, flue-gas cleaning, and more effective combustion engineering.

The choices among such measures or the combination of measures to achieve the level of emission control set by the air pollution control agency rests with the owner of the source. The use of intermittent controls is appropriately reserved for air pollution emergencies.

Third. There is increasing evidence of the long range transport of pollutants that become sulfates, acid rain, and other phenomenon affecting human health, vegetation and soils, but leaving no definable plume that is traceable back to the source.

In a report for the committee, the National Academies of Science and Engineering found that dispersion measures may exacerbate the formation in the atmosphere of acid sulfates and nitrates from the sulfur and nitrogen oxides emitted from fuel-burning sources. These derivative pollutants are thought to be more toxic forms than the oxides of sulfur and nitrogen that are actually emitted at the smokestack and are measured in the vicinity of the source.

It is recognized that the source controls may not be available to achieve the full reduction required of a particular source under particular circumstances. In such cases, supplementary programs can and should be used on a temporary basis until continuous controls are developed. But this flexibility occurs only after imposition of the continuous emission limitation.

EPA will be expected to review existing State implementation plans and require revision in any that depend upon dispersion techniques rather than continuous controls. Where necessary, State implementation plans will have to be modified. This injunction also affects the provisions of State plans which permit tall stacks.

Administrator Train stated on April 9, 1976:

... EPA's position on tall stacks and ICS are founded upon a pre-existing and long-standing opposition to an increase of the total atmospheric burden of sulfur oxides. Prior to EPA's creation, the Federal officials had argued that dispersion methods of air pollution control would not guarantee that air quality goals would

be met at the ground level. The former National Air Pollution Control Administration (NAPCA) consistently opposed the use of tall stacks as the primary means of sulfur dioxide control because of their effects on the formation and dispersion of fine particulate acid sulfates, visibility conditions, the health of exposed populations, and the acidity of rainfall. Information collected since 1970 has reaffirmed these NAPCA assessments. Thus, . . . ample evidence exists to support concerns over total atmospheric sulfur loading and the use of tall stacks.

The recently promulgated guidelines setting forth the Agency's tall stacks policy, however, does not fulfill this policy pledge.

On February 18, 1976, the Assistant Administrator for the Air Pollution Programs published guidelines of the Environmental Protection Agency's position on the use of "tall stacks" and "supplementary control strategies" as control strategies under the Clean Air Act. The guideline was ostensibly published as a response to three U.S. Circuit Court of Appeals opinions. The courts have permitted "tall stacks" and "supplementary control strategies" only on an interim basis and only after the maximum imposition of constant emission reduction measures.

The guidelines are considerably less protective of the environment than the courts' decisions require.

Far from prohibiting the construction of tall stacks or the use of intermittent controls, the guidelines provide that once minimal emission control requirements are met polluters are encouraged to substitute unlimited stack height for any further control of emissions.

As the courts have held, the act prescribes how air quality standards must be met—neither EPA nor the States may permit a proposed plan to meet the requirements by using tall stacks or other dispersion devices or systems.

A policy of encouraging "tall stacks" will increase the burden of pollution. Long-range transport of pollutants will be exacerbated. There is no support in the Clean Air Act for such a policy. Certainly such a policy would be wholly inconsistent with the policy to prevent significant deterioration.

#### OZONE [See Secs. 150-159]

The committee bill contains a new provision to protect stratospheric ozone. This amendment requires further studies by a number of agencies to provide for a better understanding of the effects of human activities, especially those resulting from halocarbon emissions, on the ozone layer and the effect of that layer on human health and welfare. There are also provisions for restriction or prohibition of activities which cause halocarbon emissions if EPA finds that they may be reasonably anticipated to cause or contribute to the endangerment of public health or welfare.

This provision was based upon a draft bill provided to the Committee on Public Works by Senator Domenici. That bill, with the exception of the question of burden of proof, represented a consensus among a number of Members interested in the ozone problem. At the time the committee considered this provision there were many proposals the effect of which would have required an immediate ban on fluorocarbons. The committee determined that the issue should be studied first. Now, on the basis of a little new scientific information, it has been suggested that we need not be concerned with fluorocarbons at all. This course is as unacceptable as a ban without a study.

We need to establish the regulatory mechanisms to be available in case the studies confirm our fears. The potential consequences of depletion of the ozone layer are too serious to ignore without providing a framework for action when adequate scientific information is expected to be available. The committee bill does this. As the sponsor of the version that prevailed, Senator Domenici will explain its provisions in more detail in his floor statement.

## VII. AUTO EMISSIONS

In 1970, the Clean Air Act established statutory standards for automobiles because it was recognized that the automobile presented the single most difficult national pollution problem. Auto emissions continue to be a threat to public health.

Congress recognized in 1965 that, as a national industry, automobiles required national emission regulation. Except for California, which is unique both from a product distribution and an air pollution point of view, the argument in 1967 for preemptive national standards was defensible.

The underlying principle of national emission standards was, and should continue to be, that those national standards would be adequate to achieve health-related air quality standards in the areas with the most difficult problems. Statutory standards established in 1970 reflected that policy. This legislation continues that policy.

### STANDARDS IN THE COMMITTEE BILL [See Sec. 202]

The committee has made two modifications of the statutory standards adopted in 1970. First, a new standard for oxides of nitrogen emissions is proposed which increases by  $2\frac{1}{2}$  times the level of emissions of that pollutant which will be permitted. Second, except for a minimum number of vehicles, the achievement of that new statutory standard for oxides of nitrogen has been delayed until 1980.

In other respects, this bill represents a modest extension of time for the auto industry to bring emission control technology into conformity with fuel economy and other objectives. The bill continues the basic purpose that health-related air quality standards associated with auto emissions should be achieved uniformly throughout the country.

The committee bill requires compliance with the statutory standards of 0.41 HC, 3.4 CO, 1.0 NO<sub>x</sub> in 1980.

Also, the committee bill requires manufacturers to produce 10 percent of their 1979 fleet at the statutory levels required for all cars in 1980. This phasein is intended to provide a period during which new emission control systems meeting the statutory requirements can be introduced and modified if necessary before 1980. However, the remaining 90 percent of production would continue to meet the 1977 requirements. This will enable manufacturers to maximize their efforts on the statutory standards, and to minimize disruption which would occur were another incremental jump mandated as in the Administrator's proposal.

Equally important, the 10 percent phasein can be used to evaluate the implications of the technology which, in all probability, will be used in 1980.

The requests for a 5-year freeze in auto emission standards were rejected by the committee after careful analysis.

Such a delay would merely give the automobile industry further time to continue to lobby Congress for further extensions.

Such a delay would remove the kind of pressure that has been absolutely essential in forcing the adoption of improved auto emission pollution control technology.

Such a delay would demoralize many local communities which have made efforts to develop control strategies to reduce auto emission pollution in their area.

Such a delay is not needed for energy or economic reasons.

The committee also rejected the recommendation of EPA Administrator Train in two respects. First, the Administrator proposed an additional incremental step at the current California standards of .9 HC, 9.0 CO, and 2.0 NO<sub>x</sub> for model years 1980 and 1981, before reaching the statutory requirements in 1982.

Mr. Train's proposal was predicated on the potential health hazard of sulfate emissions from catalyst-equipped cars. The cornerstone of his proposal was the promulgation of a sulfate emission standard, effective in model year 1979. The ensuing 2 years were to provide time for the perfection of emission control systems to achieve the statutory standards in conjunction with the new sulfate standard.

We are now told that EPA will not promulgate such a sulfate standard for model year 1979. Thus, the rationale for the Administrator's recommendation disappears. Without a limitation on sulfate emissions, there is a strong likelihood that manufacturers would meet the 1980-81 Train numbers of 0.9, 9, 2.0 as they have in the past—with a catalyst and an air pump. By the Agency's own best estimates, such vehicles emit approximately 4 to 30 times more sulfate than the more advanced catalyst technology—improved oxidation or three-way—which would be under consideration at the more stringent levels of control. According to an EPA chart entitled "Sulfate Emissions From Autos," the following information has been developed:

Technology:	Approximate emission rate (mg/mi)
Catalyst vehicles with air injection-----	30
Catalyst vehicles without air injection-----	8
Three-way catalyst vehicles-----	1
Non-catalyst vehicles-----	1

The Congress expects the Administrator to incorporate a sulfate test procedure into the certification process as soon as possible and to require a report on sulfate emissions by the manufacturers. The Administrator clearly has such general authority under section 301, as well as specific authority under section 202 to protect public health and welfare, under section 208 to require the submission of manufacturers' records and reports, and under section 211 to require testing for sulfate emissions.

#### TECHNICAL FEASIBILITY

There is no question that the industry has the technological capacity to meet the standards included in the committee bill in the time required.

Russell Train testified during the suspension hearings held over a year ago that "we found that oxidation catalyst technology to meet

the hydrocarbon and carbon monoxide statutory standards—in 1977—was available.”

The National Academy of Sciences in their June 1975 report stated that—

“Attaining these levels—.41 gram per mile HC and 3.4 grains per mile CO—by 1978 is both feasible and worthwhile.”

and

With respect to nitrogen oxide emission control: It is probably feasible with catalyst technology to achieve the statutory emission standard for  $\text{NO}_x$  (0.4 gram per mile) in 1978.

Evidence presented over 1 year ago from the National Academy of Sciences and the Environmental Protection Agency indicated that automobiles could meet final emission standards by 1978 on many cars, and on all cars by 1979. If we had required that some 1978 cars meet final standards, we would have assured that the industry would direct their efforts to meeting those standards. The manufacturers and the Congress both know this would have made appeals for delay lack credibility.

In order to be able to have independent information available to Congress which did not rely exclusively on the automobile industry judgment, the 1970 act created a technical capability in the Environmental Protection Agency to give judgments about auto emission standards. The 1970 act also created a National Academy of Sciences Committee on Motor Vehicle Emissions to issue reports on auto standards. Both of these bodies reached judgments in 1974 and 1975 which indicated that the final statutory standards could be achieved in 1978.

More than 15 months have passed since the NAS and EPA reports were issued. A new report, issued April 1976, by the Environmental Protection Agency indicates that due to the lapse of time since the earlier report and because the automobile industry has not exerted a substantial effort in the past year, it will not be possible to meet the final standards established in these 1976 amendments by model year 1978 on all cars. The new report does indicate, however, that the final standards for hydrocarbons and carbon monoxide could be met on cars in model year 1978, a year earlier than would be required by the committee bill.

EPA's certification data for 1976 cars in California shows that the industry already comes very close to meeting the proposed 1980 standards even though they are targeted on the less stringent standard of 0.9 HC, 9 CO, and 2.0  $\text{NO}_x$  required in that State. These include an AMC Gremlin, a Dodge Charger, a Ford Ranchero, and a General Motors Chevette. All of these cars achieved hydrocarbon levels of 0.4 gram per mile or less. Carbon monoxide levels ranged from 3.6 to 4.3 grams per mile and nitrogen oxide levels from 0.8 to 0.1 gram per mile.

It is notable that this list includes vehicles in a wide variety of sizes, manufacturers and engines. Additional cars that already come close to meeting the statutory standards in this bill are listed in the report on page 129.

The argument is made by the industry that these represent only a few cars, which is quite different from meeting standards across a wide range of model lines. However, to show how close their entire

production has come without even trying, it can be noted that the median emissions for each manufacturer range from 0.4 to 0.6 gram per mile of hydrocarbons, 4.7 to 6.2 grams per mile for carbon monoxide, and 1.2 and 1.7 grams per mile of  $\text{NO}_x$ . There is little doubt that between now and 1979-80, these figures can be improved the rest of the way. The industry can do it. The only question is will they be required to?

I would remind my colleagues of the risk of any further delay. When too much time is granted the auto industry, they use that time to petition for further delays and weakening of standards. We must avoid this in the future.

It is useful to remember that, with the exception of  $\text{NO}_x$ , present cars being produced meet standards no better than the industry volunteered to achieve at White House meetings 1 year prior to the enactment of the 1970 Clean Air Act. Other than reducing  $\text{NO}_x$  and lead emissions, the act has primarily served to hold the industry to its self-defined goals. This was no easy accomplishment, but beyond that, the basic objectives imposed by Congress in 1970 have been delayed subsequently by the Administrator or by Congress.

The committee's decision to provide the industry with more time did not rest principally on technical feasibility, but rather on the question of economic recovery, fuel economy and sulfates.

#### ECONOMIC CONDITION OF THE AUTOMOBILE INDUSTRY

On this first point, it is fair to say that the auto industry is well on the road to recovery. Dark projections of permanent industry depression were vastly overstated. Suggestions that the domestic auto industry would suffer permanent retrenchment have been replaced by new statistics indicating that an upturn has occurred. These suggest that the industry will once again have a good sales year this year—better than 10 million car sales—and that new sales records will be set by 1980. The upward trend is evident already.

Industry sales as of December 1975 were up 30 percent over those of a year earlier. According to the Journal of Commerce, retail sales are expected to exceed the 1973 record of over 11 million units by 1977 or 1978, and should rise to over 13 million units before the end of this decade. In fact, Elliott M. Estes, president of General Motors, predicts that in 1980 "the auto industry can reasonably look forward to the sale of 16 million new cars and trucks."

The dire statistics presented by industry spokesmen as a basis for relaxing emission requirements have also undergone a metamorphosis. Long-term layoffs of auto workers were down to about 65,000 industry-wide in January 1976, compared to 275,000 in February 1975, as reported in the January 26 New York Times. According to the April 19 edition of the New York Times, "industry analysts believe that—barring a strike by the United Automobile Workers next fall—1976 will surely become the third biggest sales year in automobile history." That same story went on to quote GM's chief economist as stating "We could even begin to approach the second best year."

I submit that these facts and projections are evidence that the clean-up of dirty cars to protect our citizens' health need not be foregone in the interest of jobs and the economy.

## FUEL ECONOMY

Since the energy crisis there has been a great deal of discussion of the need for fuel economy in automobiles and the relation between fuel economy and emission standards. Last year, the Congress passed a bill mandating a 43-percent improvement in fuel economy by 1980, with further gains to be achieved thereafter. Meanwhile, in response to the call from President Ford for a 40-percent improvement in fuel economy, the automobile manufacturers have called for a 5-year freeze of 1975 emission standards, in order to make it easier to reach the fuel economy goal.

The automobile manufacturers have projected figures for various emission requirements which suggest a loss of fuel economy of 15 percent or more if they must meet the 1980 standards adopted by the committee.

However, EPA has stated on several occasions that "there is no inherent relationship between exhaust emission standards and fuel economy." In numerous markup sessions dating from nearly a year ago, the Subcommittee on Environmental Pollution and the Committee on Public Works have attempted to resolve these conflicting views.

The Senate Commerce Committee, in preparing the fuel economy bill last year, also was concerned whether their new fuel economy standards would take away the possibility of meeting emission standards. Although the Commerce Committee included a provision in the bill for fuel economy standards to be relaxed if necessary in order to maintain the momentum toward clear air, their basic assessment was that both goals can be reached, as stated in their report:

The essential point is, given an adequate commitment on the part of the automobile industry, the 21 mile per gallon industrywide average set as a goal for model year 1980 (50 percent improvement over 1974) can be achieved with any of the hydrocarbon and carbon monoxide emission standards currently under discussion, and at most, with only slight relaxation of the statutory (0.4 g/ml) nitrogen oxide standards.

The Commerce Committee went on to comment that it was far from clear whether any relaxation is necessary, and cited a study prepared by the Federal Energy Administration which showed that, even with the present sales mix of vehicle size, up to 21 miles per gallon could be achieved as a new car fuel economy average in 1980 under the assumption that full statutory standards would be implemented in 1978, including the 0.4 gram nitrogen oxide standards—which this bill proposed to relax to 1.0 gram per mile.

The fact is that the actual fuel economy depends on the choice of technology. It is hard to say this any better than EPA did in their 1975 technology report:

With a fixed emission control system fuel economy is a function of the degree of emission control required. . . . With a fixed level of fuel economy, the degree of emission control achievable depends on the type of control technology used.

We have recently had an example of this. The tightening of the emission standards in 1975 had a favorable impact on fuel economy, which improved 14 percent over 1974. Now the 1976 model cars obtain 26 percent better gas mileage than the 1974 models, while continuing to meet more stringent emission standards.

In assessing claims and counterclaims about fuel economy, the committee felt the need for information from an objective source outside the automobile industry. The National Academy of Sciences Committee on Motor Vehicles Emissions is such a source, and has studied this issue carefully. The Academy has estimated that present statutory standards, even including the 0.4 gram per mile nitrogen oxide standard—which has been made a research objective by this bill—could be met with catalyst technology with a fuel penalty of 2 percent or less. Even that small penalty would be lessened with the relaxed 1.0 gram  $\text{NO}_x$  standards in this bill.

The Academy reaffirmed this assessment in their June 5, 1975 report, which stated that—

Emission standards for HC and CO (.41 and 3.4 grams per mile) for the 1978 and subsequent year light duty vehicles should be maintained at the current statutory levels. Attaining these levels by 1978 is both feasible and worthwhile. These levels can be achieved while steps are taken to insure against excessive emissions of sulfuric acid and acid sulfates.

The Academy said that these goals could, and should, be achieved while improving fuel economy.

The Academy participants in the June 1975 report were not of one mind as to whether the marginal benefits of achieving the statutory emission standard of 0.4  $\text{NO}_x$  in 1978 exceeds the marginal cost. They did, however, state that—

"It is probably feasible with catalyst technology to achieve . . . 0.4 gram per mile  $\text{NO}_x$  in 1978."

That same report comments that as the technology is developed further, the use of exhaust gas recirculation may not be required and even the estimated 2 percent loss in fuel economy could probably be removed.

A study performed by the Jet Propulsion Laboratory at California Institute of Technology for the Ford Motor Co. and released last August concluded that goals for emission reduction and energy conservation for the automobile over the next 5 to 10 years could be met with improvement in the conventional engine and to the vehicle.

Thus, the committee was left with the task of devising a set of standards that would meet the clean air goals and that would result in forcing, insofar as possible, the industry to adopt fuel-efficient technology.

The committee discussed establishing a 1.5  $\text{NO}_x$  standard as the statutory standard. This was rejected as not adequate to protect public health and not likely to lead to the introduction of new, improved technology. The report discusses the basis for this decision on page 60. The new 1 gram per mile  $\text{NO}_x$  standard is expected to require an improved level of technological development with fuel economy benefits.

To a certain extent, fuel economy is red herring in this debate. One cannot help but wonder what excuse the industry would have used in order to request further delays if it had not been provided with a conveniently available energy crisis.

It is quite clear that vehicle weight and engine displacement, not emission standards, are the most important factors in determining fuel economy. Well over half the gasoline used by automobiles is used by large and specialty cars, cars which almost always have more weight

than is necessary to carry out their task. The report by the Department of Transportation and the Environmental Protection Agency entitled "Potential for Motor Vehicle Fuel Economy Improvement—Report to Congress" and dated October 24, 1974, identified methods for improving fuel economy by over 40 percent with no change in engine design concepts or emission controls whatsoever.

Another opportunity for fuel economy improvement that is often discussed in the diesel engine. The 1 gram  $\text{NO}_x$  standard proposed in this bill can be met by the diesel if the industry wishes to do so. A Peugeot diesel has already achieved an average of 1.07 grams per mile of nitrogen oxide in five tests with 25 miles per gallon. The National Academy's June 1975 report concluded that the diesel is one example of an engine that offers substantial fuel economy benefits at standards down to 1 gram per mile. An EPA study of the diesel as a light duty powerplant concluded that the diesel could meet a 1 gram per mile standard for nitrogen oxides.

The most recent automobile emission control status report released by EPA in April, 1976, confirms the committee's judgment that statutory emission standards can be met with good fuel economy. According to this report, the single most important problem in meeting low emissions with good fuel economy is hydrocarbon emissions—not  $\text{NO}_x$  as has been alleged by the industry for 5 years. The report specifically identified two of the many systems using combinations of available technology such as improved catalyst, start catalyst, port liners, and sonic exhaust gas recirculation which "could be considered to make the good fuel economy engine calibrations achieve hydrocarbon levels low enough to have a high confidence of certifying at a 0.41 hydrocarbon standard."

In considering the two goals of fuel economy and improved air quality, we must remember that fuel economy is salable. The individual customer will demand it, and the industry will deliver it, especially since passage of the fuel economy bill last year. Emission control, which has a significant value to the general public, has less value to the individual user. It is not a sales item which the customer will demand, so public policy must require it or it will not be provided. The evidence the committee has gathered indicates that it needs to be done, that it can be done, and that it can be done without sacrificing fuel economy goals. The bill as reported is designed to do just that.

#### AUTOMOTIVE SULFATES

As I said earlier, the committee considered and rejected, as a basis for a moratorium on auto emission standards, the potential harm of sulfate emissions from catalyst-equipped automobiles. After 3 years of concentrated study of various aspects of the issue by the Government, industrial, and academic communities, there remains a great deal of uncertainty and disagreement as to the potential scope of the automotive sulfate problem.

Concerned by the possibility that excess oxygen from air pumps increases the conversion of fuel sulfur into sulfate within the oxidation catalyst system, the committee extended the 1977 interim standards of 1.5 HC, 15 CO, and 2.0  $\text{NO}_x$  through 1978, rather than mandating the current (1975–76) California standards of 0.9 HC, 9.0 CO, 2.0  $\text{NO}_x$

which are currently being met with wide use of air pumps and oxidation catalysts. The likelihood that no new technology would be employed at those levels nationally was one reason for going directly to the 0.41 HC, 3.4 CO standards in 1979 to encourage the use of technology which would not exacerbate the sulfate problem.

The bill also authorizes a 1-year study on the measurement of sulfur emissions from mobile sources, the health impacts of such emissions, and the control options available. It is important to note that under section 211 of existing law, the Administrator can require the desulfurization of fuel should data on these unknowns indicate an immediate need for control of sulfate emissions prior to the implementation of a sulfate emission standard. This was precisely the strategy proposed by Administrator Train in November, 1973, when he determined that the sulfate controversy did not warrant deferral of the auto cleanup schedule or prohibition of the use of catalyst.

Also, it is important to note that the Administrator has determined tentatively that the sulfate emissions from noncatalyst cars and nonair pump catalyst cars are similarly low. This modifies his March 1975 position that even without an air pump, catalyst cars appeared to emit substantially more sulfate than noncatalyst cars. The high estimates of sulfate emissions from air pump catalyst cars remained unchanged.

In fact, according to the most recent data from EPA, noncatalyst vehicles, catalyst vehicles without air pumps, and three-way catalyst equipped vehicles have similar sulfate emissions.

This information referenced previously in the chart on sulfate emissions, was only received on March 10, 1976. It confirms the committee's decision to go directly to statutory standards to avoid prolonged interim standards which would rely on modification of current technologies and thus potentially exacerbate the sulfate problem. [Sec. 403(f)]

#### TOTAL ANNUAL AUTO EMISSIONS

The need to meet tight standards is emphasized by the table which shows total annual auto emissions 1970-1985.

The table shows that if a freeze is adopted at the present CO level of 15 grams per mile, the result will be emissions of 17 million tons of carbon monoxide in 1985, as contrasted with only 4½ million tons if the 3.4 gram public health-based standard is implemented. Thus, for the sake of a freeze, we would be accepting four times as much emissions of this lethal pollutant. Emissions of smog-producing hydrocarbons would follow the same pattern.

As for nitrogen oxides, the table shows that emissions rose after 1970, and have just dropped back to the 1970 level. If we were to freeze the NO<sub>x</sub> standard at the present level of 3.1 grams per mile as the administration and the auto manufacturers have suggested, by 1985 we still would be just about where we were in 1970 before NO<sub>x</sub> was controlled at all. This bill sets a standard which will allow a little more NO<sub>x</sub>—one-half million tons—than the present statutory standard. But it will reduce emissions by 2.2 million tons compared to the freeze. This is a significant 63 percent reduction from present emission levels.

The table on inuse auto emissions versus standards shows the standards which have been implemented and proposed to meet air quality needs.

Compared to precontrolled cars, the 1976 standards represent a reduction of 83 percent hydrocarbon, 83 percent carbon monoxide, and 11 percent nitrogen oxide. Compared to 1970 models as a base, the progress is 63 percent in hydrocarbon and 56 percent in carbon monoxide, while the standard set by Congress is a 90-percent reduction. We have made some progress, but more is clearly needed. We still must reduce hydrocarbon and carbon monoxide to about one-fourth and nitrogen oxide to about one-third of their currently allowed levels to meet our clean air goals.

#### COMPLIANCE TESTING [See Sec. 207]

Because of the pressure of time and the controversy associated with major provisions of this bill, the committee did not try, in these amendments, to reemphasize existing authority in certain areas where the Administrator has failed to implement the intent of Congress. One such area relates to the extent to which cars which were certified to meet standards continue to meet these standards in use for the required 5 years or 50,000 miles.

#### INSURE AUTO EMISSIONS [See Sec. 207]

The committee has substantial data indicating that the emission performance of cars in use, with few exceptions, is considerably poorer than the requirement of the law. The table on inuse auto emissions versus standards shows that not since 1969 has the average car met the hydrocarbon standards in use, and never has it met the carbon monoxide standards. In fact, even with our newest cars, the hydrocarbon and carbon monoxide coming from cars on the road is approximately double that allowed by the standards, while NO<sub>x</sub> emissions just barely meet the weak emission standards presently required.

The table also shows the importance of getting the industry to use new technology by careful choice of standards. In 1968 when emission standards were first introduced, there was no NO<sub>x</sub> standard. The manufacturers took advantage of that loophole and chose a technology that caused NO<sub>x</sub> emissions to increase by over 40 percent.

Also, actual emissions of hydrocarbon and carbon monoxide changed very little indeed in the 6 years from 1969 through 1974 despite the fact that the standards were tightened twice and required about a 50-percent reduction in emission levels. Then, in 1975, there was a significant decrease in these emissions, although not as great a decrease as required. Why?

The answer is that it was not until 1975 that a new level of technology was introduced. Only recently, when nitrogen oxide control has been required, have these emissions dropped even as low as their pre-1969 levels.

The committee believes that this bill sets standards that will require a new level of technology. Hopefully, this will result in a significant reduction in emissions from cars on the road—not just in certification.

The latest evidence has heightened awareness of these problems. New evidence has been received since the committee concluded its deliberations regarding the automobile provisions. In a memorandum dated February 25, 1976, the Environmental Protection Agency reported on recent tests conducted in two cities in which "about half of the 1975

model year cars are significantly exceeding CO standards." The memorandum goes on to state that a major reason for this failure may be changes made in idle mixture after the car has been purchased in order to overcome customer complaints about driveability.

According to EPA, this problem results because new cars have been built with a lean fuel mixture in order to receive high fuel economy ratings and low emissions and without regard to driveability. This is apparently satisfactory for preproduction prototypes which are hand built and only operated in certification tests by professional drivers. And the industry knows that if the consumer develops problems starting a car in cold weather, the carburetor can be adjusted with no responsibility accruing to the manufacturer even though both fuel economy and emission reduction benefits are compromised.

The conclusion from this evidence is that the industry had managed to make a car that performs well at the temperature used for the emissions testing procedures—roughly 72 degrees—but also has produced a car which the consumer can be expected to alter.

It is evident that EPA must modify preproduction certification requirements to require prototype testing for driveability and to change procedures to require a broader range of tests including conditions which are found in the real world. At a minimum, driveability tests should be conducted under a wide range of temperature conditions.

EPA also has the opportunity in its certification and its maintenance instruction review programs to take two steps which will help solve the in-use emission problem. The first is to minimize, to the extent feasible, the need for periodic maintenance of cars. The second is to minimize opportunities for malmaintenance by eliminating adjustments that are commonly set improperly by mechanics and that significantly affect emissions. It is very important that EPA exercise its authority to stimulate these steps by the industry.

We must close the gap between demonstration vehicles and the actual cars on the road. We need an in-use test. We need to cause the manufacturer to be responsible, financially, for that vehicle which is in the hands of the consumer.

The 1970 act required a production line test and an in-use test. These tests are essential if consumers are to get that for which they pay. The law requires every vehicle produced to meet the standards set forth in the law or regulation for 5 years and 50,000 miles.

So long as the operator performs appropriately required maintenance, the manufacturer is legally responsible to pay for any costs associated with failure of that car to meet the standards.

#### PRODUCTION LINE TEST

Without a production line test, we will never know if cars actually meet the standards in the first instance—which they must, since without an in-use test, there will be no capability to monitor performance of vehicles on the road. And it is the combination of these tests which will create the necessary financial incentive for the manufacturer to begin to produce a clean car which can be expected to stay clean for its useful life.

The committee bill amends section 206 to require that a production line test be implemented, within 6 months of enactment. Such a test is intended to provide assurance that all cars actually meet the emis-

sion standards when they are produced. This is not to be confused with the currently proposed production line test which uses statistical sampling techniques which will not assure that all cars meet the standards, even when new. The Administrator is expected to expand this audit procedure with an actual per vehicle test by the 1979 model year at the latest.

The existence of a per vehicle production line test will not guarantee that each new car will continue to meet standards for the required useful life of 50,000 miles. Present law provides a defects warranty and performance for that purpose. The manufacturer warrants that each new vehicle will meet the emission standard for its useful life of 5 years or 50,000 miles.

The committee had considerable discussion of the automobile emission warranty provisions of the Clean Air Act. The committee report contains an extensive discussion of this issue. One of the purposes of the warranty is to assure that manufacturers make cars that control emissions when actually in the hands of consumers.

#### PERFORMANCE WARRANTY

The performance warranty provides the ultimate test of whether the manufacturer is carrying out its responsibility to build cars that will meet the emission standards for their useful life. The manufacturer is exposed to financial responsibility if a vehicle fails to do so. Without a performance warranty, the natural tendency will be to cut corners.

Some say that the useful life under the performance warranty could be reduced to 18 months or 18,000 miles. This ignores the fact that emission control systems deteriorate in use. Choice of a useful life shorter than 50,000 miles would be inconsistent with meeting air quality goals. [See Sec. 207(b)]

#### DEFECTS WARRANTY

The difference between a defects warranty and a performance warranty is important. The former requires that each element of the vehicle which relates to emissions be designed, built, and equipped so as to conform at the time of sales with applicable standards and free from defects in materials and workmanship which cause such vehicle or engine to fail to conform with applicable standards for the useful life of the vehicle. But this only protects the consumer if a specific part fails and it is shown to be defective. And, in the absence of an assembly line test, there is little possibility of catching these defects at a point where the manufacturer's responsibility can be established.

#### PERFORMANCE WARRANTY

The performance warranty is intended to assure that a vehicle will continue to actually meet standards in the hands of the consumer. It is reasonable to assume that all parts of a vehicle could meet the specifications to which they were designed without the vehicle itself meeting the standards. In this instance, a consumer, exposed to an inspection

requirement, could suffer a penalty for noncompliance when the issue was the combination of performance of the system as a whole, with no particular part of that system defective.

The manufacturers have claimed that 400 parts are covered by this provision, but most of these parts are totally unrelated to emission performance. Some of those parts must be replaced at regular intervals. Some of those parts are designed to last the entire life of the vehicle. Congress need not be concerned with either of these conditions. The question is whether or not the car which the consumer purchases meets the standards before it is purchased—at the end of the production line—and whether or not the car will continue to meet the standards under conditions of proper maintenance.

Having established through a proper production line test that each and every car made meets the standards—with appropriate deterioration factors—when it leaves the assembly line, as the current Clean Air Act requires, then the companies have an obligation to build a car which, when properly maintained, will continue to meet those standards in the hands of the consumer. Except in those instances where the manufacturer is able to demonstrate that the proper maintenance was not followed, the manufacturer must be financially responsible to bring the vehicle into compliance.

I want to underscore this point. The performance warranty is triggered by the existence of an inuse test combined with the existence of an inspection program and a penalty for failure to pass inspection. Although this provision of existing law has not yet been triggered, the bill requires establishment of the test procedure. It is then anticipated that over the next few years a number of localities will implement inuse testing programs.

Even though the manufacturer is required to produce each car so that it will meet the standards for 5 years and 50,000 miles, he is only liable for the repair costs when an inuse test exists and the vehicle fails to pass inspection and the owner is subject to a penalty.

#### CONSUMER IMPACT

As for the impact of the performance warranty on the consumer, the Automotive Service Industry Association has claimed:

Automotive industry officials estimate that the new monopoly will cost consumers billions of dollars a year in the maintenance of their cars and trucks by 1980.

In the first place, the Federal Trade Commission study called for in this bill would certainly identify such an effect if there really was one in time for corrective action if needed.

In the second place, I would rather let the consumers speak for themselves rather than letting the industry do so. The Consumers Federation of America is "strenuously opposed to this anticonsumer amendment"—reduction of the performance warranty to 18 months/18,000 miles. They also point out that consumers whose cars fail the emission test beyond 18,000 miles will have to pay to have their cars remedied even when the cars were properly maintained.

Consumer's Union, publisher of Consumer's Reports states:

In response to the five-year warranty requirement promulgated by EPA, auto manufacturers have designed the control devices, and the various parts related to the performance of these devices, for substantially longer endurance than would be the case under a one year warranty.

... a reduction in designed durability would mean an increased incidence of repair for such devices and parts. This would add substantially to the consumer's cost of maintaining emission control devices to EPA performance standards.

Evidently, consumers prefer the 50,000 mile performance warranty on emissions systems. They do not buy the auto industry claim that it will cost the consumer huge sums of money. Neither should the Congress. In fact, the reverse is true: the performance warranty saves the consumer money.

Reducing the duration of the performance warranty as proposed will only reduce the incentive for the manufacturer to produce clean cars that will stay clean. It will not protect the consumer. It will not protect the aftermarket industry. It will protect the auto industry. It is an auto industry proposal and it should be so branded.

If Congress wants to protect the auto manufacturer from the responsibility to produce a clean car that will remain clean, then I suggest that we consider elimination of the Federal emission standards altogether. We are perpetrating a hoax on the American people if we tell them to invest \$100 or \$200 to equip vehicles with emission controls and then tell them that the auto industry has no financial responsibility to insure that those vehicles will meet the standards after they are in the hands of the consumer. I will not be a party to that hoax.

If there is an anticompetitive aspect associated with this requirement in present law, then the committee amendments should be more than adequate to correct it. The manual for each vehicle must describe the elements for proper maintenance. [See sec. 207(c)(3)] Independent service operators can perform that proper maintenance and record performance of that maintenance in the owner's manual. On its face, that record would provide a rebuttable presumption which the manufacturer would have to overcome to avoid the burden of any costs resulting from the failure of a vehicle to pass inspection.

#### THE COMMITTEE BILL

The committee clearly wanted to take every reasonable step to protect the aftermarket industry and the consumer against monopolistic practices by the automobile manufacturers. As a result, this bill includes three new provisions to enhance competition in aftermarket parts and services. These actions include:

First, requiring all owners' manuals to contain instructions that maintenance does not have to be performed by the dealer or with the manufacturer's own part. [Sec. 207(c)(3)]

Second, making illegal any warranty provision that attempts to tie coverage to the use of the dealer's service and parts. [Sec. 207(c)(3)(B)]

Third, establishment of a program which will enable aftermarket parts manufacturers to certify that their parts perform as well as the

auto manufacturer's—the auto manufacturers have no role in approving such certification. [See Sec 207(a)]

Fourth, a Federal Trade Commission study of any possible anticompetitive effect.

The only other proposed change in the warranty provision was the reduction in useful life to 18 months/18,000 miles. As noted above, this would be inconsistent with clean air goals and consumer protection. The Consumer Federation of America and Consumer's Union oppose such a change in the law. The Federal Trade Commission examined this question about 1 year ago and recommended the steps the committee has taken in order to avoid any anticompetitive effect of this warranty. They did not recommend any change in the 5-year/50,000-mile provision.

The performance warranty is one of the most important tools for achieving air quality goals for automobiles. Any attempt to reduce its coverage must be rejected.

#### OTHER MOTOR VEHICLES

Control of mobile sources other than automobiles has lagged despite the fact that they can be regulated under the general provisions of the present Clean Air Act.

It is inequitable for automobiles alone to bear the burden of pollution control, when they only contribute, for example, 50 percent of the hydrocarbon pollution from mobile sources.

The committee intends that this situation be corrected and that all other classes of motor vehicles be required to achieve by 1980 a reduction of emission equivalent to that required for automobiles. Nonavailability of technology would be the only reason for any delay.

To achieve this, this bill makes more specific EPA's authority to regulate heavy-duty vehicles and motorcycles. It is expected that EPA will use its existing authority to regulate light-duty trucks and other non-automobile category of motor vehicles to meet this requirement. [See Sec. 202(a)(3)]

#### VIII. CONCLUSION

Congress asserted in 1967 a Federal interest in protecting the public's health from the adverse impact of air pollution and a national policy to protect air quality in clean air areas. Congress recognized that a national regulatory framework with basic minimum standards and an aggressive Federal agency would be necessary.

We must not disband that effort.

I support much of this bill. There are improvements. There are causes of concern. There are provisions which, if enlarged in later actions, will lead to delay, reductions of efforts, and the inevitable conclusion that environmental goals and public health protection will not be accomplished. That possibility we must not forget.

I ask that a study entitled "Pollution Control and Employment" prepared by the Executive Office of the President, the Council on Environmental Quality, be printed in the record.

The PRESIDING OFFICER. Without objection, it is so ordered. [See exhibit 6.]

## EXHIBIT 1

TABLE A-1.—ADDED EMISSIONS OVER 1975 (SO<sub>2</sub>)—SULFUR OXIDES

[Millions of tons per year added emissions over 1975 (1975 national emissions 34,300,000 tons)]

Scenario	1980	1985	1990
No. 1 (base).....	2.6	4.7	7.0
No. 2.....	2.0	3.4	5.0
No. 3.....	2.2	3.0	3.8
No. 4.....	1.7	2.2	2.8

Scenario	Assumptions (SO <sub>2</sub> )	
	Electrical growth, percent per annum	Pollution control
No. 1.....	High (6.1).....	NSPS and SIP.
No. 2.....	Moderate (4.8).....	NSPS and SIP.
No. 3.....	High (6.1).....	BACT.
No. 4 <sup>1</sup> .....	Moderate (4.8).....	BACT.

<sup>1</sup> Most like Senate bill and present FPC growth projections.

Key: NSPS=New source performance standards; SIP=State implementation plan; BACT=Best available control technology (scrubbers with 90 percent efficiency plus available local fuel).

Reference: EPA Office of Air Quality Planning and Standards, March 1976.

TABLE A-2.—ADDED EMISSIONS OVER 1975 (NO<sub>x</sub>)—NITROGEN OXIDES

[Millions of tons per year added emissions (1975 national emissions 24,000,000 tons)]

Scenario	1980	1985	1990
Base.....	7	18	25
No. 1.....	7	15	22
No. 2.....	7	12	18
No. 3.....	7	11	16
No. 4 <sup>1</sup> .....	5	7	9
No. 5.....	4	6	7

Scenario	Assumptions (NO <sub>x</sub> )		
	Light-duty vehicles (grams per mile)	Heavy-duty vehicles (percent emission reduction)	Stationary sources
Base.....	3.1	Present standards.....	Existing NSPS and SIP.
No. 1.....	2.0	EPA 1978 plans.....	Do.
No. 2.....	1.0	75 percent.....	Do.
No. 3.....	.4	90 percent.....	Do.
No. 4 <sup>1</sup> .....	1.0	75 percent.....	Accelerated NSPS.
No. 5.....	.4	90 percent.....	Do.

<sup>1</sup> Most like Senate bill.

Note: Growth assumed at 3 percent p.a. for mobile and 3 to 6 percent p.a. for stationary sources.

Key: NSPS=New source performance standards; SIP=State implementation plan.

## EXHIBIT 2

TABLE B.—PROJECTED CAPITAL INVESTMENT FOR SELECTED MAJOR INDUSTRIES, 1975-83

[Billions of 1975 dollars]

	Total <sup>1</sup>	Air pollution control	
		Current	Maximum BACT <sup>2</sup>
1. Electric utility industry <sup>3</sup> .....	\$212.5	\$17.8	\$4.8
2. Steel mills.....	27.5	3.3	<sup>4</sup> NA
3. Petroleum refineries (figures for industry as a whole).....	4.90	<sup>3</sup> 5.1	<sup>4</sup> NA
4. Pulp mills.....	21.5	<sup>2</sup> 2.0	<sup>4</sup> NA

<sup>1</sup> Excludes the investment in pollution control equipment shown.<sup>2</sup> Period covered is 1975-85. The effect of the nondegradation amendments are the only ones indicated in the BACT column.<sup>3</sup> In addition to regulations for airborne emissions, includes effect of unleaded gasoline/lead phase-down regulations and costs for residual fuel oil desulfurization.<sup>4</sup> Industry as a whole, of which the refining segment is a part, invests at rate of about \$10 billion/year; 9-yr industry total is about \$90 billion.<sup>5</sup> Assumes emission limitations equivalent to low sulfur coal plus a scrubber in the West and washed high-sulfur coal or medium-sulfur coal plus a scrubber elsewhere. Assumes States will choose to apply such a standard on all new major emitting facilities. (Ref: EPA Feb. 5, 1976.)<sup>6</sup> BACT is expected to have a minor impact. Elimination of class III will have a potentially significant impact in locations that are hilly or that are projected to have large concentrations of industrial facilities.

Reference: EPA Office of Planning and Evaluation, March 1976.

## EXHIBIT 3

TABLE C.—STATIONARY SOURCE COMPLIANCE

	Total plants	In compliance with SIP <sup>1</sup>	On schedule	No schedule or not meeting schedule	Unknown compliance with SIP or on schedule, unknown status or SIP being finalized <sup>2</sup>
		(A)	(B)	(C)	
1. Coal-fired power plant.....	394	164	56	171	3
2. Iron and steel mills and coke plants....	250	87	48	86	29
3. Nonferrous smelters.....	25	8	3	2	<sup>3</sup> 12
4. Petroleum refineries.....	295	184	22	26	63
5. Pump and paper mills (Kraft and sulfite).....	232	125	45	46	16
6. Municipal incinerators.....	165	32	25	57	51
7. Major coal-fired industrial boilers.....	<sup>4</sup> 3,500	1,475	210	1,325	490
8. Federal facilities.....	456	161	27	96	172

<sup>1</sup> In compliance with SIP means that the entire facility is in compliance.<sup>2</sup> Unknown compliance with SIP means that one or more emission points at a facility has not been investigated by the appropriate State or EPA within the past year.<sup>3</sup> These smelters listed as not on a schedule do not yet have an established SIP requirement. Such requirements have been proposed and are in the process of being finalized.<sup>4</sup> The number of coal-fired boilers is approximate since not all of these have been located and their compliance status determined. Boilers are not an independent industrial category as are the other sources listed in this table, but rather are located at facilities in a number of industrial categories. The compliance numbers in the table are based on the relative proportion of compliance and noncompliance of those boilers that have been identified.

Source: EPA Office of Enforcement, compliance data system, January 1976.

TABLE D-1.—TOTAL ANNUAL AUTO EMISSIONS (CO) CARBON MONOXIDE

[In million metric tons per year]

Scenario	1970	1972	1975	1980	1985 -
Freeze at present standard (15g/mi).....	55	46	32	20	17.0
Public health based standard in 1977 (3.4 g/mi)....	55	46	32	13	4.5

TABLE D-2.—TOTAL ANNUAL AUTO EMISSIONS (NO<sub>x</sub>) NITROGEN OXIDES

[In million metric tons per year]

Scenario	1970	1972	1975	1980	1985
Freeze at present standard (3.1 g/mi).....	3.8	4.2	3.8	3.5	3.6
Freeze at 1977 interim standard (2.0 g/mi).....	3.8	4.2	3.8	2.8	2.4
Similar to Senate bill (1.0 g/mi).....	3.8	4.2	3.8	2.3	1.4
Implement present Clean Air Act (0.4 g/mi).....	3.8	4.2	3.8	2.1	.9

References: Adapted from "Air Quality and Automobile Emission Control," vol. 4 "The Costs and Benefits of Automobile Emission Control," pp. 82-83. A report by the National Academy of Sciences for the Senate Public Works Committee, committee print, 1974.

## EXHIBIT 5

TABLE E.—AUTOMOBILE EMISSIONS—INUSE AND STANDARDS

[Grams per mile corrected to 50,000 miles deterioration]

	HC		CO		NO <sub>x</sub>	
	Standard <sup>1</sup>	Actual inuse <sup>2</sup>	Standard <sup>1</sup>	Actual inuse <sup>2</sup>	Standard <sup>1</sup>	Actual inuse
Model year:						
Precontrol.....		8.7		87		3.5
1968.....	5.9	5.7	50.8	67		4.3
1969.....	5.9	4.8	50.8	62		5.1
1970.....	3.9	5.1	33.3	64		4.9
1971.....	3.9	4.6	33.3	57		5.2
1972.....	3.0	5.0	28.0	65		5.2
1973.....	3.0	4.6	28.0	60	<sup>3</sup> 3.1	3.9
1974.....	3.0	4.5	28.0	54	3.1	3.3
1975.....	1.5	3.0	15.0	35	3.1	2.8
1976.....	1.5		15.0		3.1	
1977.....	1.5		15.0		2.0	
1978.....	1.5		15.0		2.0	
1979.....	.4		3.4		<sup>4</sup> 2.1	
1980.....	.4		3.4		1.0	

<sup>1</sup> Actual standards are shown for 1968-77. Standards proposed in committee bill are shown for 1978-80.

<sup>2</sup> Inuse data from EPA surveillance program, fiscal years 1971, 1972, 1973, 1974. Average values cited. Range of values (95 percent confidence interval) is roughly plus or minus 0.7 HC; plus or minus 8 CO; plus or minus 0.4 NO<sub>x</sub>, although it varies from year to year.

<sup>3</sup> NO<sub>x</sub> was not controlled until model year 1973.

<sup>4</sup> 2 g per mile for 90 percent of production; 1 g per mile for 10 percent.

## EXHIBIT 6

## POLLUTION CONTROL AND EMPLOYMENT COUNCIL ON ENVIRONMENTAL QUALITY

*Pollution control and employment; an assessment of relevant research*

## Introduction

The possible impact of pollution control programs on employment has been an issue of particular concern during the past year as the country suffered from high unemployment rates. It is alleged that pollution control programs have added to this problem. Such programs can affect employment, both in a positive and a negative fashion. Possible negative effects can occur for several different reasons. Pollution control regulations can force plants to close down. They can interfere with the normal expansion of production capacity (directly by inhibiting new construction, or indirectly by diverting capital away from capacity expansion or generally interfering with smooth economic growth). And they might stimulate firms to shift new production capacity out of the United States to countries which have less stringent pollution control regulations.

On the other hand, cleaning up the environment also creates jobs. People are employed constructing pollution abatement systems, manufacturing the equipment used in these systems, and operating and maintaining the systems after they are built. The following paper summarizes the available information on both the job losses and the job gains that can be attributed to pollution control programs.

## Job Losses

EPA maintains an "early warning system" which collects information on threatened and actual plant closings which, it is alleged, are caused in part by pollution control requirements. This system has found evidence of 75 such closings affecting 15,700 employees.<sup>1</sup> The Bureau of Economic Analysis has also attempted to obtain information on closings. Their 1975 survey found that one-half percent of the firms surveyed reported closing a process or plant in 1975 at least, in part, because of environmental regulations.<sup>2</sup> This was a sample survey, and there is no indication how many closures there were in firms that were not surveyed. However, the BEA results suggest that the problem may be more serious than EPA's information would indicate, because a comparison between the two lists of closures showed little apparent correspondence between the firms included in the BEA sample, and the plants identified by EPA.<sup>3</sup> The Oil, Chemical, and Atomic Workers International Union (OCAW) also analyzed plant closures which affected its workers.<sup>4</sup> They, and subsequently EPA, found little evidence that environmental regulations have been a significant factor in these closings.<sup>5</sup>

It is not clear what these plant closings mean, either in terms of economic impact or in terms of lost jobs. Many of the closures take place in older facilities which economic considerations would have probably forced to close anyway, particularly during a severe recession such as the country has experienced. Nor is it true that the number of employees affected is an indication of the number of jobs lost. Even in the affected plant the number of lost jobs may well be less than the number of employees affected. U.S. Steel's closures of its Gary, Indiana, open-hearth furnaces affected at least 2,500 workers, but only 250 to 500 employees actually lost their jobs. In addition, the production lost from closing one facility is likely to be made up by increasing production—and therefore employment—at another facility.<sup>6</sup> These factors make it particularly difficult to assess the impact of closings on employment, although they can clearly create serious local problems, particularly when they occur in areas already suffering high unemployment rates.

In terms of plants shifting abroad, almost all the analyses done on this issue indicate that it is a relatively minor problem with little employment impact.<sup>7</sup>

## Employment Gains

But environmental programs have also created employments. There is a rapidly expanding industry manufacturing pollution control equipment. And hundreds of thousands of jobs are involved in constructing municipal sewage treatment systems and industrial pollution control systems, and in operating these systems once they are built.

One of the earliest studies of the employment generated by environmental programs was the work carried out by Bruce M. Hannon and Roger H. Bezdek at the University of Illinois.<sup>8</sup> Their work, using an input-output model, focused

<sup>1</sup> Environmental Protection Agency, "1975 Third Quarter Report of the Economic Dislocation Early Warning System," Dec. 31, 1975.

<sup>2</sup> Bureau of Economic Analysis, "Capital Expenditures By Business for Air, Water, and Solid Waste Pollution Abatement, 1974 and Planned 1975." Survey of Current Business, Vol. 55, n. 7, July, 1975, pp. 15-19.

<sup>3</sup> Personal communication from Roy Gamse, Director of the Office of Economic Analysis, Environmental Protection Agency, February, 1976. Because the BEA surveyed firms and the EPA lists individual plants, it is impossible to determine how many of the plants on the EPA list are actually included in the BEA sample without a further survey of the BEA reported closings.

<sup>4</sup> "Health Safety and Environmental Considerations as Factors in OCAW Plant Closings, 1970-1975." Prepared by the Research Department of the Oil, Chemical, and Atomic Workers International Union, January, 1976.

<sup>5</sup> See OCAW report, statement by Tony Mazzochi, Legislative Director of OCAW before the Environmental Study Conference (2456 Rayburn House Office Building, Washington, D.C.) on February 23, 1976; and memorandum from Chris Moore to Roy N. Gamse, "Plant Closings—Oil, Chemical and Atomic Workers International Union (OCAW)," updated (prepared February, 1976).

<sup>6</sup> It is unlikely that the employment effects will balance. The plants that go out of business are relatively inefficient, and therefore are likely to employ more workers for a given output than the average firm in the industry.

<sup>7</sup> See CEO's Sixth Annual Report, pp. 542-543, for the brief summary of these studies.

<sup>8</sup> Bruce M. Hannon and Roger H. Bezdek, "Job Impact of Alternatives to Corps of Engineers Projects," *Engineering Issues—Journal of Professional Activities*, American Society of Civil Engineers, Vol. 99, n. PP4, Oct. 1973, pp. 521-531; and "Energy, Manpower, and the Highway Trust Fund," *Science*, Vol. 185, 23 August, 1974, pp. 669-675. Also Bezdek, Roger A. "Toward Manpower and Energy Dimensions for the Federal Budget," *Journal-Environmental Systems*, Vol. 5(1), 1975.

on Federal programs, and analyzed the employment (and energy) impacts of constructing waste-water treatment facilities compared to possible alternative expenditures. Their analyses showed that one billion (1975) dollars allocated to such construction would employ a total of 82,000 people.<sup>9</sup> This is more employment than would result from the same amount of money being spent on highway construction or water resource projects, but less than would result from several other programs. Expenditures on construction programs in general stimulate less employment than equivalent expenditures in areas such as health or law enforcement.

One important point about the Hannon and Bezdek estimates is that they include both direct and indirect employment. They include not only the direct employment at the construction site and in making the equipment, but also such indirect employment as that involved in providing goods and services for the personal consumption of the people who are employed directly. Most of the 82,000 people would never associate their employment with the construction of wastewater treatment systems. For instance, EPA estimates that a \$1 billion expenditure creates 20,000 jobs at the construction site; this is only one-fourth the total number of jobs that Hannon and Bezdek estimate are generated by this expenditure.

The Bureau of Labor Statistics undertook a similar employment study, which concentrated on different aspects of Federal environmental expenditures.<sup>10</sup> They estimated that only 53,600 jobs were generated by each billion dollars spent on the construction of wastewater treatment systems, but 76,000 to over 78,000 jobs resulted from a billion dollars spent on research and on administering the pollution control programs. These estimates were apparently based on 1972 dollars, and therefore would have to be adjusted downward to take account of the inflation that has occurred since then.

All these estimates have been given on the basis of jobs per billion dollars expended. Converting these into total job estimates at current rates of expenditure indicates that 200,000 to 300,000 jobs are related to the municipal grants program (including the state and local share), and about 125,000 jobs are related to other Federal pollution abatement expenditures.

There are fewer studies available on the impact of private pollution abatement expenditures on employment. EPA has sponsored studies of manpower requirement to build and operate pollution control devices. The most recent study to be completed on this subject concluded that there are 3.76 million employees involved in operating industrial water pollution control equipment with an equivalent full-time employment of 575,000 man years.<sup>11</sup> Although the study was carefully done and was based on sample surveys, these estimates seem very high. It does not seem reasonable that one-half percent of our labor force is involved only in operating industrial pollution control equipment.

One employment estimate that has received a substantial amount of publicity recently is that made by Kenneth Leung and Jeffrey Klein in a report on the environmental equipment industry prepared for the Council on Environmental Quality.<sup>12</sup> Based on an estimate that a total of \$15.7 billion was being spent for pollution abatement in 1975, and assuming that, on the average, a billion dollars generates 70,000 jobs (directly and indirectly), they estimated that over one million jobs were associated with air and water pollution control programs last year. This is a very crude estimate, but can be supported by comparing pollution control expenditures as a percent of the total labor force. The Nation is spending somewhat more than 1 percent of its GNP on abating air and water pollution, and as a result would expect these expenditures to employ about 1 percent of the labor force. This amounts to about 1 million people.

These are not all new jobs, nor are they all attributable to Federal environmental legislation. And finally, many of these one million people would most likely have been employed somehow even in the absence of this legislation. To

<sup>9</sup> Bezdek and Hannon, *Ibid.*

<sup>10</sup> U.S. Department of Labor, Bureau of Labor Statistics, "Impact of Federal Pollution Control and Abatement Expenditures on Manpower Requirements," Bulletin 1836, 1975.

<sup>11</sup> E. Joe Middlebrooks, "Manpower Needs of Manufacturing Industries," *Journal of the Water Pollution Control Federation*, Vol. 47, n. 12, Dec. 1975, pp. 2850-2862.

<sup>12</sup> Kenneth Ch'uan'Kai Leung and Jeffrey A. Klein, "The Environmental Control Industry," a report submitted to the Council on Environmental Quality, December, 1975.

analyze the net increase in jobs resulting from environmental expenditures, one has to look not at the type of studies listed here, but at macro-economic studies such as those sponsored by CEQ and EPA.<sup>13</sup> These studies indicate that during a period such as the present when environmental programs are forcing increased expenditures while the economy is suffering unemployment, these programs have a net beneficial impact on employment. The most recent analysis estimates that the unemployment rate has been 0.3 to 0.4 percent lower with environmental programs than it would have been without them.<sup>14</sup> This means that approximately 300,000 people are now employed who would otherwise not be. This positive employment effect can, of course, only occur during periods when the country would otherwise be experiencing unemployment. It is expected to disappear as the economy recovers from the recession and as the price increases associated with environmental expenditures begin to have a slight dampening effect on GNP growth. In the long run, however, no significant net impact on unemployment is projected to result from the programs.

In brief, then, pollution control expenditures are seen as having a net positive impact on employment at the present time. And a new industry has been established which has been a source of growing employment during the past few years. This industry has the opportunity and challenge to devise innovative abatement systems which will conserve natural resources, save energy, and reduce costs. If it is successful in meeting this challenge, this industry will not only provide a source of continuing employment itself, but will help contribute to the continued viability and stability of our whole economy.

#### AMENDMENT NO. 2084

Mr. HUMPHREY. On behalf of Senator Mondale, I submit an amendment to S. 3219, the Clean Air Act amendments.

#### STATEMENT BY SENATOR MONDALE

The Metropolitan Council in Minnesota is a unique organization which has gained nationwide fame as an example of effective planning in a number of areas.

When the Metro Council was set-up in the 7-county area of the Twin Cities, the State legislature was concerned that such an organization not build parochial interests of local governments, but give a regional viewpoint in coordinating activities of the metropolitan area. Thus, the legislature decided that the members would be appointed by the Governor of the State, and approved by the Senate, rather than elected by local residents.

The Council's role as defined by State statute is to achieve orderly growth and development in the 7-county metropolitan area. The Council is responsible for coordinating all proposals, projects, expenditures, and plans that directly and substantially affect development in the Twin Cities area.

The Council is responsible for preparing policy plans for all levels of government for waste control, transportation, solid waste, airports, and parks and open space. These plans must be followed by local governmental units and other regional operating commissions.

Under this authority, the Council reviews the capital budgets and development programs of the other regional commissions in the areas of waste control, transportation, airports, and parks and open space. These programs must be in conformance with metropolitan systems statements prepared by the Metro Council for each local plan.

The major components in the Clean Air Act for implementation plans to improve ambient air quality and to regulate stationary sources of pollution are transportation planning and land use planning. The Metro Council has strong authority in both these areas. An important part of their transportation planning program is studying the relationship between transportation and air quality to ensure that regional transportation plans will meet federal standards.

In the past, the Metro Council has had to go to great lengths to obtain administrative authority under the Water Pollution Control Act. Locally elected officials from the major jurisdictions in the planning area had to provide formally adopted resolutions naming members of the Council from their jurisdiction

<sup>13</sup> Chase Econometrics, Inc. "Macro-economic Impacts of Federal Pollution Control Programs," a study prepared for the Council on Environmental Quality and the Environmental Protection Agency, 1975.

<sup>14</sup> The results of an updated analysis are expected in April, 1976.

as their designees, and the EPA had to approve this designation. This took a good deal of time and effort.

I urge that this same situation be avoided as we determine the provisions of the Clean Air Act. I would hope that states such as Minnesota which set up an effective planning organization will not be penalized by limiting the administrative authority to locally elected governing bodies.

I can understand the concern that those with the authority to administer these important programs be responsive to local citizens, and there is a good deal to be said for granting elected officials this responsibility. In fact, for the past few years, attempts have been made in the Minnesota State legislature to change the composition of the Metro Council to locally elected officials. However, these attempts so far have not been successful.

Given the proven effectiveness of the Metropolitan Council, I hope that the Senate will agree to grant them the authority to administer the provisions of the Clean Air Act.

AMENDMENT NO. 2084

On page 25, line 8, after the word "purpose" insert the following:

"Or by an area-wide agency designated under State law to perform comprehensive planning for the affected area".

## SENATE DEBATE ON S. 3219, JULY 27, 1976

Mr. MUSKIE. In 1970 we enacted the landmark clean air amendments, which had three basic objectives: first, to achieve air quality which would protect public health; second, to establish specific regulatory requirements and precise timetables for achievement of those long-term public policy goals for air quality programs.

The Clean Air Act of 1970 was a new departure.

We knew our goals. They had been established in 1967 when Congress asserted a national interest in achieving health-related air quality standards in our Nation's urban-industrial areas and in maintaining clean air in regions in which air was still pristine.

We proposed and saw enacted two basic tools—controls on emissions and establishment of deadlines. Emission controls replaced air quality standards as the enforcement mechanism; and deadlines provided the public with a basis against which to judge progress. For autos, this translated into statutory emission standards and fixed deadlines.

The 1970 amendments have brought considerable progress in controlling air pollution. Total emissions of some pollutants have been reduced. But in most cases, these improvements will be temporary. By mid-1975, the national ambient air quality standards for all pollutants have been fully achieved in only 91 of the Nation's 247 air quality control regions. Emissions from new growth will reverse this progress unless further efforts are made to control pollution.

The real test of pollution control comes now—years later. Whether or not the legitimate gains made can be held is uncertain. Those victories and those precedents are now under attack.

In order to assure the Congress that the requirements of the 1970 act were justified, the Senate Public Works Committee contracted with the National Academy of Sciences for a \$500,000 study of air quality standards.

The Academy reached these conclusions:

First. Evidence accumulated since the enactment of the 1970 amendments supports the ambient air quality standards which were promulgated as a result of that act;

Second. Safety margins associated with those standards are only marginally adequate;

Third. Susceptible groups in the population which may be adversely affected by unhealthy air constitute about 40 million people;

Fourth. Best estimates indicate that air pollution causes 15,000 excess deaths per year, 15 million days of restricted activity per year, and 7 million days spent in bed; and

Fifth. Health effects of automobile pollution alone causes 4,000 deaths per year and 4 million illness restricted days per year.

The Nation still experiences the problems which led Congress to adopt the firm approach of the 1970 amendments:

In the summer of 1975, the State of Iowa experienced its first air pollution alert.

In the summer of 1975, the Washington, D.C., area suffered its highest recorded single-day level of photochemical smog in history. The 8-day alert was the area's second longest ever.

The New York Times reported on November 20, 1975, that as many as 30 industrial plants in the Pittsburgh area cut back operations to alleviate emergency levels of air pollution which were the highest concentrations ever recorded in Alleghany County since the establishment of its monitoring system in 1971. An alert is called when the air quality index reaches 100; the readings from November 17 through 20 reached 249.

The challenges to the premises of the act have been limited, but there has been a campaign to eliminate the regulatory and enforcement tools necessary to achieve those public policy objectives.

The bill before the Senate reflects these conflicting pressures. We voted to give cities more time to utilize new transportation modes—and to provide transportation alternatives.

We voted to give the auto industry 2 more years to achieve statutory standards.

We revised the enforcement sections of the act—revisions which are encouraging.

This year the committee voted to make specific the requirement that clean air areas be protected. We determined that each new major plant should be required to use the best pollution control technology available and that the impact of each new plant's emissions should be evaluated against a national nondegradation standard.

This decision was a victory for environmental quality. It comes at a time when Congress is being asked to sacrifice environmental initiative for economic recovery even though there is little demonstrable relationship between the two.

I would like to turn, to the subject of nondegradation which appears to be the most controversial aspect of these amendments.

The committee unanimously agreed that the prevention of deterioration of clean air areas should be resolved by the Congress and not by the courts. Having reached these conclusions, the committee worked for many months to develop a consensus regarding the most useful method for prevention of deterioration.

Let me emphasize again the twin objectives of the Clean Air Act from the first one, which was written in 1963 but specifically from the 1967 amendments. The twin objectives were these: To clean up the areas which were already dirty and thus hazardous to the public health and public welfare of the Nation.

The second was to protect those areas of the Nation in which the air was still relatively clean so that it would not deteriorate to the condition of the dirty air areas of the country. It is that latter objective which is the subject of controversy in the nondegradation issue.

The nondegradation provisions in the bill do these things:

First. Place primary responsibility and authority with the States, backed by the Federal Government;

Second. Apply only to new major emitting facilities, not affecting existing facilities;

Third. Require that large, new sources use the best available technology to minimize emissions, determined by each State on a case-by-case basis;

Fourth. Provide a margin of safety to protect national ambient air quality standards, assuring prudent consideration of any major emitting facility that may threaten that air quality;

Fifth. Require the Federal Government, as a property owner, to protect the values related to air quality on certain Federal lands under the stewardship of various Federal agencies;

Sixth. Eliminate the so-called buffer zones there were hypothesized around various land classifications;

Seventh. Affect only those areas where air quality is cleaner than the present primary or secondary standards;

Eighth. Establish a permit process, managed by the State, which is included in an analysis of the air quality impact of new, major emitting facilities;

Ninth. Require that the permit application should include data on background air quality and potential associated growth in order to better understand the overall air quality implications of the new facility; and

Tenth. Establish that there should be a nationally applicable maximum level of change in the air quality of clean air regions—the so-called class II increments—which would be a measure in the change in air quality permitted in any given area as a result of the operation of one or more new, major emitting facilities.

The bill's procedures to prevent significant deterioration apply only to new, major emitting facilities and do not affect existing facilities or new facilities which are not specified as major by this bill or by subsequent EPA regulations.

Major emitting facilities are only those 28 industrial sources identified by category in the statute—or later identified by EPA—and which have the potential to emit more than 100 tons of a pollutant per year. These do not include houses, dairies, farms, highways, hospitals, schools, grocery stores, and other such sources.

Once the State adopts a permit process in compliance with this provision, the Environmental Protection Agency role is to seek injunctive or other judicial relief to assure compliance with the law.

### III. ENFORCEMENT AND PENALTIES

The 1970 Clean Air Act established a deadline for achieving public health-related air quality standards. While substantial progress has been made in bringing many sources into final compliance, an improved mechanism must be established to handle sources presently not in compliance.

The committee recognizes that some of the facilities are in compliance and that other facilities are on compliance schedules. These sources deserve praise. They have made or committed investments. They have cleaned up their emissions or are in the process of cleaning up their emissions.

The committee bill provides for delayed compliance orders and delayed compliance penalties [see **sec. 120**] as a new strategy to

enforce applicable emission limitations and to address the problem of those existing sources which are out of compliance. This provision allows a State or EPA to issue enforcement orders to sources not in compliance with applicable emission limitations. Such orders will require compliance as expeditiously as practicable but in no event later than January 1, 1979. [Sec. 113]

The committee bill also authorizes the Administrator to seek civil penalties for violation of emission limitations or schedules and timetables of compliance. This authority is independent of the deadline extension and the delayed compliance penalty. If a State has not issued a delayed compliance order with a new time schedule, the Administrator is required to seek an injunction against the noncomplying source and is authorized to seek civil penalties for noncompliance. [See sec. 113(b)] In addition, the Administrator is authorized to seek additional penalties against sources which are subject to the delayed compliance penalty.

#### IV. EXPANSION IN NATIONAL AMBIENT AIR QUALITY STANDARD AREAS

Under present law, facilities that want to expand at their present locations face a very stringent review test if they are located in areas where ambient standards are presently exceeded. In many cases, this means that under the law, expansion at that site is precluded until the ambient standard is attained.

The reported bill provides some new flexibility in this area, but it is carefully contained and strictly limited. The new amendment would allow expansion at an existing site if a new facility uses the best available control technology, if existing sources meet all applicable emission limitations, and if total cumulative emissions will be sufficiently less to represent reasonable progress toward attainment of the standards. [Sec. 173]

#### V. TRANSPORTATION AND LAND USE CONTROLS

Transportation and land use controls were authorized as air pollution control mechanisms by the 1970 act. When carried out properly, such controls are a positive tool. The requirements of the 1970 act could have been the stimulus for beneficial uses of land and transportation in environmentally compatible ways. This opportunity was not seized. In order to adjust the transportation control requirements to the difficulties of implementing such policies, the committee has adopted an amendment which provides more flexibility, more local involvement, more time, and more State discretion in fashioning these strategies. The bill requires the adoption as rapidly as practicable of all reasonable transportation control measures in areas where such measures are necessary. [See sec. 174]

If an area is implementing transportation control measures and all requirements for stationary sources that emit mobile source-related pollutants, but still cannot meet the deadline, it may receive a 5-year extension to achieve primary standards for the applicable mobile source-related pollutant. A second 5-year extension is available for the few most difficult problem areas. This means that deadlines for those areas could extend to May 31, 1987.

The key tests are that all reasonable requirements are contained in the plan and are implemented as expeditiously as practicable.

The reported bill revises the basis on which land use controls are to be used to assure that land use decisions be made at the local level. The 1976 amendments place EPA's authority to promulgate land use regulations in a new perspective. Land use questions are to be resolved at the State and local level. Federal action is to occur only when the State fails to act or there is a demonstrated inadequacy in the State program to achieve or maintain a health-related level of clean air.

#### VI. OTHER ISSUES

The 1970 clean air amendments included a requirement that State implementation plans impose "emission limitations." This term has been the subject of controversy, litigation, and dispute. These 1976 amendments provide a statutory definition of the phrase "emission limitation." Intermittent controls or dispersion techniques are unacceptable as a substitute for continuous control of pollutants under this act. [Sec. 302(k)]

As the courts have held, the act prescribes how air quality standards must be met—neither EPA nor the States may permit a proposed plan to meet the requirements by using tall stacks or other dispersion devices or systems. [See sec. 110(a)(6)] A policy of encouraging "tall stacks" will increase the burden of pollution. Long-range transport of pollutants will be exacerbated. There is no support in the Clean Air Act for such a policy. Certainly such a policy would be wholly inconsistent with the policy to prevent significant deterioration.

#### VII. AUTO EMISSIONS

In 1970, the Clean Air Act established statutory standards for automobiles because it was recognized that the automobile presented the single most difficult national pollution problem. This legislation continues that policy.

The committee has made two modifications of the statutory standards adopted in 1970. [Sec. 202] First, a new standard for oxides of nitrogen emissions is proposed which increased by  $2\frac{1}{2}$  times the level of emissions of that pollutant which will be permitted. Second, except for a minimum number of vehicles, the achievement of that new statutory standard for oxides of nitrogen has been delayed until 1980.

The committee bill requires compliance with the statutory standards of 0.41 HC, 3.4 CO, 1.0 NO<sub>x</sub> in 1980.

Also, the committee bill requires manufacturers to produce 10 percent of their 1979 fleet at the statutory levels required for all cars in 1980. This phase-in is intended to provide a period during which new emission control systems meeting the statutory requirements can be introduced and modified if necessary before 1980.

The requests for a 5-year freeze in auto emission standards were rejected by the committee after careful analysis.

Such a delay would merely give the automobile industry further time to continue to lobby Congress for further extensions.

Such a delay would remove the kind of pressure that has been absolutely essential in forcing the adoption of improved auto emission pollution control technology.

Such a delay would demoralize many local communities which have made efforts to develop control strategies to reduce auto emission pollution in their area.

Such a delay is not needed for energy or economic reasons.

The auto industry is well on the road to recovery. Industry sales as of December 1975 were up 30 percent over those of a year earlier. According to the *Journal of Commerce*, retail sales are expected to exceed the 1973 record of over 11 million units by 1977 or 1978, and should rise to over 13 million units before the end of this decade.

Since the energy crisis, there has been a great deal of discussion of the need for fuel economy in automobiles.

The fact is that the actual fuel economy depends on the choice of technology. The tightening of the emission standards in 1975 had a favorable impact on fuel economy, which improved 14 percent over 1974. Now the 1976 model cars obtain 26 percent better gas mileage than the 1974 models, while continuing to meet more stringent emission standards.

The committee believes that this bill sets standards that will require a new level of technology. Hopefully, this will result in a significant reduction in emissions from cars on the road—not just in the certification stage.

The performance warranty provides the ultimate tests of whether the manufacturer is carrying out its responsibility to build cars that will meet the emission standards for their useful life. The manufacturer under this bill is exposed to financial responsibility if a vehicle fails to do so. Without a performance warranty, the natural tendency will be to cut corners. [Sec. 207]

If there is an anticompetitive aspect associated with this requirement in present law, then the committee amendments should be more than adequate to correct it.

The committee clearly wanted to take every reasonable step to protect the aftermarket industry and the consumer against monopolistic practices by the automobile manufacturers. As a result, this bill includes three new provisions to enhance competition in aftermarket parts and services. These actions include:

First, requiring all owners' manuals to contain instructions that maintenance does not have to be performed by the dealer or with the manufacturer's own parts; [see sec. 207(c)(3)]

Second, making illegal any warranty provision that attempts to tie coverage to the use of the dealer's service and parts; [Sec. 207(c)(3)(B)]

Third, establishment of a program which will enable aftermarket parts manufacturers to certify that their parts perform as well as the auto manufacturer's—the auto manufacturers have no role in approving such certification [Sec. 207(b)(2)] and

Fourth, a Federal Trade Commission study of any possible anti-competitive effect.

#### VIII. CONCLUSION

Congress asserted in 1967 a Federal interest in protecting the public's health from the adverse impact of air pollution and a national policy to protect air quality in clean air areas. Congress recognized that a national regulatory framework with basic minimum standards and an aggressive Federal agency would be necessary.

We must not disband that effort.

I support much of this bill. There are improvements. There are causes of concern. There are provisions which, if enlarged in later actions, will lead to delay, reductions of efforts, and the inevitable conclusion that environmental goals and public health protection will not be accomplished. That possibility we must not forget.

It is in that spirit, that the committee virtually unanimously reported out and supported this bill, the details of which, were subject to much controversy among committee members until we were finally able to resolve our differences and present a package to the Senate which we thought made sense and which was viable.

Mr. BUCKLEY. I believe we have achieved a fair compromise. I believe the bill is workable. I believe, whereas it may put back certain specific goals, it will not really slow the momentum to achieve the goals of clean air throughout this country.

It is quite clear that the deadlines that we are establishing in this bill are reasonable and attainable. There should be no excuse for anyone to start dragging their heels in anticipation of further delays.

Mr. MUSKIE. There are approximately 24 amendments at the desk, and I hope they will be offered by the sponsors as rapidly as possible.

#### AMENDMENT NO. 1623

Mr. DOMENICI. I call up my printed amendment No. 1623. The amendment is as follows:

On page 20, line 22, insert "(a)" after "SEC. 7."

On page 28, after line 7, insert the following:

"(b) Section 110 of the Clean Air Act is amended by adding a new subsection as follows:

"(i) In carrying out the requirements of subsections (a) (2) (B) (i) and (ii), (g), and (h) of this section and subsections (d) and (g) of section 113, the State shall provide a satisfactory process of consultation with general purpose local governments and designated organizations of elected officials of local governments, in accordance with regulations promulgated by the Administrator to assure adequate consultation. Such regulations shall be promulgated after notice and opportunity for public hearing and not later than four months after the date of enactment of the Clean Air Amendment of 1976. The Administrator may disapprove any portion of a plan relating to any measure described in the first sentence of this subsection or to the consultation process required under this subsection if he determines that such plan does not meet the requirements of this subsection. Only a general purpose unit of local government, regional agency, or council of governments adversely affected by action of the Administrator approving any portion of a plan referred to in this subsection may petition for review of such action on the basis of a violation of the requirements of this subsection.'"

Amendment 1623 establishes a consultive framework between State and local government for other portions of the law, including nondegradation and stationary sources, as with transportation control plans. I see such local involvement as an absolute prerequisite to establishing the kind of grassroots support that will insure the success of the Clean Air Act. Without local support, I feel that we may be conducting a noble but futile effort, and I urge that the amendment be adopted.

Basically, I am saying that, along with the other requirements in this bill, the States shall provide a satisfactory process of consultation with general purposes local government and designated organizations

of elected officials of local government in accordance with regulations promulgated by the administrator to assure adequate consultation.

As this committee proceeded through deliberations in connection with the Clean Air Act Amendments for this year, it was obvious that in many areas local government is expected to lead the way: local government is expected to be up front in terms of leading their populace in the very difficult and sometimes almost impossible implementation of the Clean Air Act.

What I have done, on behalf of the mayors of our country, on behalf of the Association of County Officials, is merely to build into the process of evaluation the process of contact with local government, the processes whereby the Governor and the State do certain things with reference to SIP's, with reference to nondegradation, with reference to planning or control under that section for transportation control planning—so that the process has an acceptable consultive process for local government.

This amendment, is not the one that sets up the mechanism to do the planning, but merely requires that a consultation mechanism with general purpose local government be established.

Mr. MUSKIE. As I read the amendment, its purpose is to insure that States provide for satisfactory consultation with local governments in carrying out land use, transportation controls, nondegradation, in issuing delayed compliance orders, and in implementing the steel amendment. That is to be done, I gather, under regulations to be published by EPA to insure adequate consultation.

I understand, also, that the amendment provides that the Administrator may disapprove plans that have not complied with regulations; finally, that such disapproval can be petitioned only by local government.

It is very carefully worded amendment. I believe it is consistent with the philosophy of the bill. It is the kind of consultation which is consistent with the intent of the transportation control and land use provisions of the bill. Further, I think it is a useful expansion of that approach to apply it to delayed compliance orders and the amendment.

Finally, I gather that the amendment is supported by the National Association of Counties, the League of Cities, and the U.S. Conference of Mayors, without whose support the objectives of the Clean Air Act could not be advanced effectively.

Mr. BUCKLEY. I shall not oppose this amendment, but I do want to express a reaction.

I believe that the Senator from New Mexico is totally correct when he states that transportation plans, for example, simply will not work without public support and that public support is best elicited by having local elected officials totally involved from the beginning to the end. However, I have seen many examples of where we create unnecessary problems when the Federal Government dictates to a State that it will work with its local officials. I prefer that we leave it entirely to the States to work things out with their local officials, in accordance with their own constitutional systems. I hate to see us expanding the areas in which we have dictation from Washington to a State, even though I totally agree with the objective of the specific amendment as a practical matter. I will not oppose it.

Mr. DOMENICI. In this amendment, I do not intend to give the Administrator of EPA any more authority with reference to what goes into the plan or plans or process. I envision that EPA merely would have a kind of checklist and say, "Is there a consultive process?" I know of no other way, having heard the testimony that not only is the Federal Government the usurper of local involvement but the States are as well, in many instances. They have a State umbrella, and they come down all of a sudden and tell the city, "This is your plan. This is what you are going to do."

Everyone knows that without local consultation, local knowledge on the part of elected, local, general-purpose government leaders, these kinds of impositions, these kinds of changes in the way we are going to do business, our constituents or our institutions will not work. I do not envision a mammoth, detailed involvement by the national Government, but, rather, that they will be sure there is a consultation process with local government.

Mr. BUCKLEY. I understand the point that is being raised by the Senator from New Mexico, but this amendment would, nevertheless, dictate to the State that it must consult.

Mr. DOMENICI. That is true.

Mr. BUCKLEY. This, to my mind, is an infringement on what ought to be within the independence and sovereignty of the State, the right to make mistakes.

Mr. McCLURE. I think it is possible that some future administrator of EPA might decide he does not like what is in the State plan or some plan for a locality and use the authority that is required under this proposed amendment to say, "Unless you change some details of the plan, I shall certify that there has not been sufficient compliance with this consultative procedure." Certainly it is not the intention of the Senator from New Mexico that the authority of the administrator under this amendment to require consultation could be used in that manner.

Mr. DOMENICI. I concur wholeheartedly with that interpretation and unequivocally indicate that it is not the intention of this amendment to expand upon the authority of the Administrator of EPA with reference to what is or is not in a plan or process or approach other than to find that there is a consulting mechanism.

Mr. McCLURE. If, indeed, an administrator at some time in the future should attempt to use the authority granted under this provision in order to force a change in the detailed plan, that would be a clear abuse of the authority of that office under the conditions of this amendment?

Mr. DOMENICI. Absolutely.

If there is anything that we found in the days of hearings with reference to the various changes that have to occur at the local level in order to get our ambient air ultimately to the state that we want it, aside from cleaning up the cars and aside from cleaning up stationary sources, and the other things that are going to have to occur, it is obvious that they are not going to occur by any kind of mandate from an Administrator of EPA on high.

He has tried that. His activities in transportation planning, control planning, have been described as draconian. He has been described in Los Angeles as being some kind of dictator saying we are going to

have to take our cars off the street, ration gasoline, retrofit our cars. What we are talking about here is if you want anything to work, including the SIP's as they develop them, be they amendments or the ongoing process of developing SIP's, you just have to consult with the mayors, councilmen, or county commissioners. That is all I intend here, that we have a process whereby they will obtain knowledge because they have been consulted with. They do not even have any authority under this amendment, but they must be consulted with as this law is implemented.

Mr. McCURE. I share with the Senator from New Mexico the feeling that any of these plans, to be successful, must have local acceptance and local support. It is far too easy for local officials to condemn a plan as being foisted off on them by some national administration if they have not been involved, and it is much more likely to succeed if, as a matter of fact, they are involved in its development and will be involved in its implementation. Then they are a part of it, they are partly responsible for it, they have helped to shape it, they have a stake in seeing that it works. They will attempt to make it work instead of trying to subvert it.

I think the consultative process is a very valuable and very necessary one. I shall support the amendment, but I do have the recognition that an administrator who would desire to use this authority in some other way might attempt to do so. That is the reason that I asked the question: To make it very, very clear that an administrator who tried to dictate content in the plan by withholding the certification that consultation had taken place would be very clearly abusing the authority granted to him under this amendment.

I think the amendment is a good amendment and I support it.

#### AMENDMENT NO. 1624

Mr. DOMENICI. I call up my printed amendment No. 1624 and ask that it be considered.

The amendment is as follows:

On page 25, strike lines 3 through 7 and through "purpose." on line 8, and insert in lieu thereof the following:

"(7)(A) The implementation plan required by paragraph (3) of this subsection shall be prepared by an organization of elected officials of local governments designated by agreement of the local governments in an affected area, and recognized by the State for this purpose. Where such an organization has not been designated by agreement within nine months after the enactment of the Clean Air Amendments of 1976, the Governor (or, in the case of an interstate area, Governors), after consultation with elected officials of local governments, shall designate an organization of elected officials of local governments in the affected area to prepare such plan." [See sec. 121]

Mr. DOMENICI. Before I discuss this amendment, I believe that Senators Humphrey and Mondale have an amendment that specifically relates to this amendment No. 1624. I believe that I can accommodate their amendment by inserting a phrase in mine.

I think what I shall do, is send a modification of my amendment to the desk. We shall discuss it. I assume that the discussion will satisfy the distinguished Senators Humphrey and Mondale. If it does not, they can discuss it with us.

Mr. MUSKIE. I should like to leave one suggestion: that is that the time frame in this amendment was changed from 9 to 6 months. On

page 21 of the bill, on line 9, there is a deadline of June 1, 1978, for the completion of a detailed planning study that evidences public and local governmental involvement. That deadline will be a little tight. I think, with the 9 months of the Senator's amendment. He might consider changing the 9 months to 6 months.

Mr. DOMENICI. I have no objection to 6 months. I offer this thought: Many of the dates and months in this bill are out of focus now that we consider the timeframe when we originally contemplated it versus when it will finally become law. I assume some of these will be adjusted in conference, in any event, so they will become more realistic.

I shall include in the modification that I have at the desk changing the 9 months to 6. That has been done on the modification. For those who do not have the modification, it is as follows: Change the "nine" on line 9 to "six" and add some language to change the Humphrey-Mondale amendment.

In the fifth line of my amendment, after the word "governments." I would insert: "or by an area-wide agency designated under State law to perform comprehensive planning for the affected area."

The amendment, as modified, is as follows:

On page 25, strike lines 3 through 7 and through "purpose." on line 8, and insert in lieu thereof the following:

"(7) (A) The implementation plan required by paragraph (3) of this subsection shall be prepared by an organization of elected officials of local governments or by an areawide agency designated under State law to perform comprehensive planning for the affected area designated by agreement of the local governments in an affected area, and recognized by the State for this purpose. Where such an organization has not been designated by agreement within six months after the enactment of the Clean Air Amendments of 1976, the Governor (or, in the case of an interstate area, Governors), after consultation with elected officials of local governments, shall designate an organization of elected officials of local governments in the affected area to prepare such plan."

The Senate has just adopted my amendment 1623 and, when coupled with amendment No. 1624, these amendments are more or less a single legislative package designed to give local government a voice in the implementation of the Clean Air Act.

The absence of a statutory role for local governments in the present Clean Air Act came in for heavy criticism during the committee's 1975 legislative hearings. One local official referred to the intergovernmental provisions of the laws as a "nightmare." Others detailed a growing grassroots rebellion against the act traceable to the lack of local involvement.

During its deliberations on the present amendments, the committee was well aware of the need for upgrading the role of local governments. The committee report explicitly addresses this issue on page 29, where it states:

To date, a major problem has been a deficiency in local involvement in transportation control planning. To correct this, the bill requires that locally elected officials participate in the development of transportation control plans to obtain the post-1977 extension. This recognizes that transportation control planning is a local political process affecting the daily lives and transportation patterns of local voters.

I would like to stress that involving locals in transportation control planning and other aspects of the bill is not simply a matter of intergovernmental comity. It is essential for the protection of the health of the American people. Statutorily, transportation control plans rep-

resent the last line of defense in achieving the health goals of the act. They are used when all else has failed. As the report notes, 31 metropolitan areas have already been identified by the Environmental Protection Agency as in need of transportation control plans. EPA projects that 63 will need them to meet the national standards by 1985.

Several additional points are in order to highlight the gravity of the situation. A large portion of the debate on the automobile standards has highlighted the improvement being made in the emissions of the new cars. Counterbalancing these gains, however, is the continued growth in the automobile population and the poor emission performance of in-use automobiles. The Nation is faced with the prospect that after 1985, the gains made by statutory controls on new cars will be overwhelmed by growth in automobile usage and poor in-use performance. In short, we have less than a decade to amend our errant ways or face the prospect that the present struggle over automobile emissions will have been for naught.

It is because I consider it so critical to engage local government in both the transportation control process and the overall implementation of the act that I offered the two amendments, one of which has been accepted.

The amendments themselves I consider to be of a technical nature, however. As the committee report indicates, we clearly recognized the importance of local participation in the transportation control process. The language of the bill, drawn in large part from an administration proposal, does not fully implement the intent expressed by the report. My amendments remedy the situation in two respects. First, amendment 1624 would clear up the ambiguous designation section of the transportation control section by making it explicit that local elected officials have the first option on doing the planning. The present amendments provide a procedural no-man's land that exhort locals to do the planning but leave all authority with the States.

Mr. RANDOLPH. I believe it is important that the Senator, in discussing his amendment and the possibility of incorporating it in the so-called Humphrey-Mondale amendment, give emphasis to the agency being composed of local officials.

I am not sure whether the Senator is saying local officials, if possible. It certainly will be possible to have those local officials, and I caught there a degree in which the Senator felt local officials should serve; am I correct in that?

Mr. DOMENICI. My amendment, without the addition of the Humphrey-Mondale amendment, clearly would have required that elected officials of local governments designated by agreement of local governments in an affected area are the ones to be recognized.

I have tried to accommodate what I understand to be a very specific problem in their State. They have a council of governments-type institution in their twin cities which is not operated by elected officials but which has the full blessings of local officials and is recognized by their State.

So I have said it will be, "or by an areawide agency designated under State law to perform comprehensive planning for the affected area."

I have done that because I believe they have a very specific problem.

On the other hand, if the managers of the bill on the floor would accept mine without that amendment, I will delete it and they, of course, can speak for themselves.

Mr. RANDOLPH. Ordinarily I would want, consistent with the purpose of the bill, to accommodate a Senator who has a certain problem he is attempting to meet.

I suggest, however, in this instance that the Senator from New Mexico not incorporate the language of the Humphrey-Mondale amendment.

I see here an element of the decision-making process by those of the bureaucracy. I want the determination to be by those who are elected officials, elected by the people of the area or the city. Those who are involved have a responsibility, having been elected, which I do not believe is shared by those who would be appointive officials in a determination of this problem.

I can well understand, and my colleague perhaps does not feel this is a matter that is too important in the presentation of his amendment. But I would ask that he not incorporate the amendment by the Senators from Minnesota because I believe that is a different situation and I would oppose the language of the amendment to which I have made reference.

Mr. DOMENICI. Might I ask the minority floor manager for his feelings with reference to the discussion we are having at this time.

Mr. BUCKLEY. I share the sentiments expressed by the chairman. I believe that the adoption of the Humphrey-Mondale language would make an exception, in the case of two important cities, in the principle of local determination that it is the purpose of the Senator from New Mexico to achieve. I think we are better off without it.

Mr. McCURE. Mr. President, I understand the concerns expressed by both the Senator from West Virginia and the Senator from New York, and I would certainly have no objection if the Senator from New Mexico wishes to delete the Humphrey-Mondale amendment from his amendment.

I would point out, however, the Humphrey-Mondale amendment simply says "a unit of government approved by State law."

If we want to say an agency designated by a State government is not a unit of government designated by State law, I will accept that as correct.

The point I was seeking to make is this: whether it is an agency or an administrative unit of the government, they are both creatures of State law.

I think we sometimes forget that what we are dealing with here are the State agencies, whether they be an agency or a unit of the local government, both of which can be created or abolished or modified or changed or combined by State law.

I think we sometimes make the error of trying to go beyond the right of the State to designate its own administrative hierarchy in trying to designate to the States what that hierarchy should be.

But I am concerned with the Mondale-Humphrey amendment in one other slight detail. That is, it refuses the language, comprehensive planning.

I think that gets us beyond the issue to which the Senator from New Mexico has directed himself and into another area that might lead to some trouble with the administration of this particular provision of the bill.

I would support the Senator from New Mexico in deleting that, if that is his desire.

Mr. DOMENICI. I modify my amendment so as to delete the inserted language following the word "governments" on line 5.

The amendment, as modified, is as follows:

On page 25, strike lines 3 through 7 and through "purpose." on line 8, and insert in lieu thereof the following:

"(7) (A) The implementation plan required by paragraph (3) of this subsection shall be prepared by an organization of elected officials of local governments designated by agreement of the local governments in an affected area, and recognized by the State for this purpose. Where such an organization has not been designated by agreement within six months after the enactment of the Clean Air Amendments of 1976, the Governor (or, in the case of an interstate area, Governors), after consultation with elected officials of local governments, shall designate an organization of elected officials of local governments in the affected area to prepare such plan."

Mr. BUCKLEY. I commend the Senator for offering this amendment. I believe it fills a gap that was overlooked by the committee.

I think that it will focus the direct responsibility of the State where it should be, and give local officials the time they need.

Mr. RANDOLPH. I join in the commendation of the Senator offering the amendment. It is very clarifying because that was the intention in the committee and in the subcommittee.

Mr. DOMENICI. I hope we all understand that the committee and certainly the Senate by accepting this amendment is saying that in the area of transportation control planning, without the wholehearted support of local government, that is, general purpose local government, and their elected leaders, that which is required to accomplish transportation control planning will fail.

It is for that reason I support the position of the Conference of Mayors, the National Municipal League, the National Association of County Officials, who are in support of my technical amendment.

I urge its adoption.

The amendment, as modified, was agreed to.

#### UP AMENDMENT NO. 247

Mr. BENTSEN. I have an unprinted amendment which I send to the desk and ask that it be stated.

The amendment is as follows:

SEC. 42. The Clean Air Act is amended by inserting a new Section 319 as follows:

"SEC. 319(a). There is established a joint Federal-State Committee on Photochemical Oxidants which shall be composed of the Chairman of the Council on Environmental Quality, who shall be the chairman of the Committee; the Administrator of the National Oceanic and Atmospheric Administration; the Administrator of the Environmental Protection Agency; and any Governors of those States having air quality control regions in which primary ambient air quality standards for photochemical oxidants are exceeded at the time of enactment or are projected to be exceeded within the period of the study, or their representatives.

"(b) Within two years after the date of enactment of the Clean Air Act Amendments of 1976, the Committee shall report to the Congress, the States, and the Administrator of the Environmental Protection Agency on the extent to which the reduction of hydrocarbon emissions is an adequate or appropriate method to achieve primary standards for photochemical oxidants. Such study shall include, but not be limited to:

"(1) a description and analysis of the various pollutants which are commonly referred to as 'photochemical oxidants', or chemical precursors to photochemical oxidants;

"(2) an analysis of any pollutants or combination of pollutants which need to be reduced to achieve any photochemical oxidant standard, and the amount of such reduction ;

"(3) the relationship between the reductions of hydrocarbons, oxides of nitrogen, and any other pollutants and the achievement of applicable standards for photochemical oxidants ;

"(4) the degree to which background or natural sources and long-range transportation of pollutants contribute to measured ambient levels of photochemical oxidants ;

"(5) any other oxidant-related issues which the Committee determines to be appropriate.

"(c) The Committee shall undertake to contract with the National Academy of Sciences and such other non-profit technical and scientific organizations for the purpose of developing necessary technical information.

"(d) The heads of the departments, agencies, and instrumentalities of the Executive Branch of the Federal Government shall cooperate with the Committee in carrying out the requirements of this section, and shall furnish to the Committee such information as the Committee deems necessary to carry out this section.

"(e) The Administrator of the Environmental Protection Agency shall make available to the Committee to carry out this section not to exceed \$1,000,000 of the sums appropriated to the Agency for fiscal year 1977."

The amendment I propose is to establish a State and National coordinated committee, to try to study the effect of photochemical oxidants and the procedures that are being used.

I believe this study will be a valuable addition to the act. [See **sec. 403(d)**]

As a result of the strategies now being enforced, requirements are being made that are going to affect millions of lives across this Nation. Tens of millions of dollars are going to be spent for pollution control equipment, the possibility of stringent transportation controls, and severe limitations on new plant expansion or construction may well be required to meet the requirements of the plans proposed for the achievement of the current photochemical oxidant standard.

I am confident that the American people will make those sacrifices if their need can be demonstrated. Right now, however, there is serious reason to believe that such need cannot be demonstrated.

To resolve those doubts, to clarify the problem and the possible means for its solution, and to give credence to whatever effort may be required, I am proposing a special committee which shall be charged with the sole responsibility of examining the photochemical oxidant problem. I am asking that it:

Analyze and describe the various pollutants commonly referred to as "photochemical oxidants"; enumerate those which should be regulated and for which the American people should be protected; recommend strategies for their attainment; determine what effect the control of hydrocarbons will have on oxidant formation and concentrations; and clarify the degree to which background levels of oxidants contribute to those concentrations.

I represent a couple of cities that will have some very serious problems on the control of photochemical oxidants and we are willing to pay the price that has to be paid to have the clean air that we want for this country of ours.

What we want to be sure of, as we do it, is that the strategies that we are employing are really accomplishing that objective.

We are not sure of that at the present time. The committee could, of course, examine any other oxidant-related issue it determined needed addressing. I would hope it would do so. My intent in proposing this

study is to acquire at least a clear understanding of what needs to be done in controlling photochemical oxidants, why, and with what hopes of success. I believe its findings and recommendations are of critical importance to every large metropolitan city in America, and the millions of people who choose to live in them.

I represent 3 of the 10 largest cities in the United States. These problems we are talking about of photochemical oxidants are serious ones for us. We are willing to make the commitment, but we want to be sure of our ground as we do it.

I know this bill as reported by the Public Works Committee includes special authority for a new national Commission on Air Quality. I am for that. It is given a variety of important tasks, and I believe the Congress would benefit from its findings. I have not, however, decided to give it responsibility for the oxidant control study, primarily because I believe it is a highly technical undertaking. My hope is that it will utilize those members of the scientific community who are already examining this important issue.

I might emphasize, too, that the States, through their Governors and their State air control administrators, are to play a major role in this undertaking. Under the act, State governments are given primary responsibility for having their air control regions attain the national standards. As a result of their efforts during the past 5 years, many State authorities have been among the first to express doubts about the attainability of the current oxidant standard and the suitability and effectiveness of the control strategies proposed to achieve it. In some instances, as in my home State of Texas, they have already initiated major research efforts to examine this problem.

I believe on the basis of their experience and ongoing work, the States can contribute greatly to this effort and I would therefore expect them to play an important part in this study.

I believe this study will be a valuable addition to the act. In 1971, national primary and secondary standards were set for oxidants, as for the other five pollutants which are currently regulated. Since then, the appropriateness of those oxidant standards has been the subject of an on-going debate. The Environmental Protection Agency already has authority to reevaluate and, if needed, to revise those or any other national standard, and I would strongly urge that it be responsive to data which might establish a solid basis for altering them.

Great controversy has, however, also been aroused by the strategies proposed for the attainment of the current oxidant standards. An essential element of all proposed oxidant control plans has been the reduction of hydrocarbon emissions, with the extent and degree of control directly related to the frequency with which the oxidant standards are violated. The underlying premise of these control strategies is that a reduction of manmade hydrocarbon emissions will result in a reduction of photochemical oxidant formation and concentrations. That was the belief when control strategies were first proposed in early 1971, and that apparently remains the Agency's official position today.

Many persons intimately involved in what is admittedly a highly technical subject charge that far too little is known about the precise relationship between hydrocarbons and oxidants. They ask whether a major reduction of hydrocarbons actually will result in a significant,

or even appreciable, decrease in photochemical oxidant readings. I am not convinced that we now have a truly accurate answer to that question.

And yet, that answer vitally affects what will happen in much of urban America. Extremely stringent transportation controls have already been proposed to reduce hydrocarbon emissions in a number of our largest cities. For instance, in 1973, EPA proposed sweeping plans for a number of Texas cities, including requirements that vehicle miles traveled in Houston be reduced by 75 percent; and in Dallas, by 66 percent.

Such reductions were to be accomplished by a number of means, one of which was the rationing of gasoline. The impact of such controls and the reaction of the people to them can easily be imagined.

Through section 7 of this bill, we have extended the time frame during which the need for transportation control may be considered and their actual use be initiated. The major reason for their adoption, however, would be as an additional means for controlling hydrocarbon emissions, again premised on the assumption that the control of HC will result in the attainment of the oxidant standards. Before these controls are required, I do not think unreasonable the need to prove that they will achieve the desired results.

Major enforcement efforts to control hydrocarbon emissions from stationary sources are already underway. The State of Texas has perhaps one of the most stringent control programs in the Nation. During the past 3 years, for instance, it has reduced hydrocarbon emissions from stationary sources—refineries, petrochemical plants, and the like—in Houston by no less than 85 percent. The Air Control Board states that those stationary sources are responsible for 75 percent of all of the HC emissions in Houston, but in the words of Mr. Charles Barden, the Board's most capable Administrator:

We have seen no effect whatsoever of oxidant reductions and we have seen very little effect on reducing visibility problems . . .

In fact, oxidant readings have actually risen.

In noting that, I am not suggesting that no benefit has been derived from the hydrocarbon reductions achieved thus far. But the real motivation for further reductions is EPA's insistence that they are needed for Houston to attain the current national oxidant standards.

I cannot overemphasize the concern of Mr. Barden and his staff that further HC reductions may well not result in reductions of the recorded oxidant concentrations, or reductions commensurate with the cost of the controls. In testifying before the Senate Environmental Pollution Subcommittee last year, Mr. Barden stressed repeatedly that, in his words:

It is not now possible scientifically to determine the degree of control needed to attain the photochemical oxidant standard or even to state with certainty that the standard is attainable.

The real crunch for the Air Control Board and the State is yet to be felt, however. Because Houston exceeds the current primary oxidant standard of 0.08 part per million for more frequently than once a year, it is classified as a nonattainment area for photochemical oxidants. Under the plans required by section 110 of the 1970 act, no new major hydrocarbon emitting sources which would prevent the attain-

ment or maintenance of that standard should be permitted to build, and EPA has indicated that it intends to have that provision enforced. Again, its reasoning apparently is that new HC emitting facilities would only delay eventual attainment of the oxidant standards.

The practical consequences, of course, will be that no refinery, no petrochemical complex, no on-shore or off-shore petroleum transfer point, or any other major hydrocarbon-emitting facility could be constructed. Continued economic growth in Houston would thus be all but precluded.

Again, the people of Houston and our other metropolitan areas might well forego that development if they thought such limitations were required to achieve a standard which is proven to be needed to protect their health, but the most knowledgeable officials in the State cannot assure them that the limitation of plant sitings will have any effect whatsoever.

I believe that requiring State authorities to enforce regulations in which they have no confidence—not because they simply do not like them, but because they find no scientific justification for them—is simply unacceptable. We have a responsibility to clear the air, so to speak, on this controversy before we impose requirements which the Agency cannot now demonstrate will actually help to clean it.

I have to this point directed my remarks almost exclusively to the experience of my home State, Texas, indeed, has perhaps had the most experience with this problem, and both public and private groups there are now striving to expand our understanding of it.

But the problem is by no means confined to Texas. As of late 1973, 162 of the Nation's 247 air quality control regions were in violation of the oxidant standard, and that number actually represented 87 percent of all regions performing ozone monitoring. Of this group, 54 percent more than doubled the standard. Because of the remarkable growth which Houston and the Texas gulf coast are experiencing, complying with the requirements of current control strategies may cause the most immediate problems there, but they do portend what air control authorities elsewhere will experience in dealing with future development in the many other regions which violate the oxidant standard.

One of the major problems with trying to attain that standard appears to be the relatively high levels of oxidant which are generated not by man but from natural sources. These background levels are generated by a variety of foliage and cause the current standards to be violated in areas far removed from our urban centers.

For example, Drs. Peter Coffey and William Stasiuk of the New York State Department of Environmental Conservation reported after conducting a year-long monitoring study, that oxidant readings on Whiteface Mountain—a 4,900-foot peak in the Adirondacks near the Canadian border—frequently were above the national standard. In fact, the annual average reading there in a recent year was 0.04 part per million, far higher than in our cities and twice the 0.02 part per million which is Houston's annual average. I might note here, too, that Texas exceeds the oxidant standard about 2 percent of each year. Houston exceeds it about 3 percent of the time.

We may still not know what accounts for these high rural readings and what part urban, or manmade, emissions contribute to them, but

I believe that the extent of background or naturally generated hydrocarbons and oxidants must be more thoroughly understood before we can expect any proposed controls to have an appreciable impact on the problem. Before we ask State authorities to enforce a standard and the strategies allegedly needed to achieve it, we must know if that standard is attainable, if it is needed, and whether the control of manmade hydrocarbons will actually result in any oxidant reduction. Again, I am not satisfied that we know the answers to those three questions.

This discussion may appear to be somewhat ironic. In section 16 of this bill, we express concern over the possible depletion of ozone in the stratosphere—and quite rightly so. At the same time, the air control problems of so many of our cities and rural areas are related to what is regarded as far too much of the same chemical substance—ozone.

Recent scientific work seems to suggest that a connection between ozone readings in the upper atmosphere and on the surface might, indeed, exist. In what are called tropopause gaps, stratospheric ozone is injected into the troposphere in a rather nonuniform manner. As weather fronts move across the map, the roll of the jet stream apparently results in the descent of air from the stratosphere downward into the air masses beneath. These gaps often have dimensions measured in the hundreds of miles. Concentrations as high as 1 part per million have been recorded, with readings of 0.5 part per million often observed. Air masses can thus come charged with ozone, a phenomenon over which man, to the best of my knowledge, has no control.

Two other points should be made. The current oxidant standard and control strategies are based on data collected solely in Los Angeles. We have no assurance that oxidants are formed in the same way in different air control regions of this Nation. For instance, we do know that the hydrocarbons emitted in Los Angeles tend to differ from those which predominate in Houston. The petroleum and chemical feedstocks, for instance, tend to be quite different; therefore, the types of hydrocarbons emitted would also vary significantly. We may well have different chemical reactions occurring in the air above different cities, yet we have only one control strategy which is to be applied in every case. We must ask if that single control strategy will work in every instance.

In addition and perhaps to stress the obvious, oxidants are not emitted by themselves. They are formed in the atmosphere by the interaction of hydrocarbons and oxides of nitrogen in the presence of sunlight.

Currently, however, our oxidant control strategy concentrates exclusively on the reduction of hydrocarbons. Nothing is being done to limit nitrogen oxide emissions from stationary sources, and yet that  $\text{NO}_x$  control might well be a key to oxidant reduction. I must ask what the reason is for overlooking this major constituent agent and for the seemingly blind rush to reduce only hydrocarbon emissions.

In noting these recent findings, I am not suggesting that man stand idly by and do nothing. I am only suggesting that man-made hydrocarbon emissions may contribute far less to oxidant formation and the high oxidant readings than was originally thought. Before we proceed to implement control strategies which will alter the growth

patterns of this Nation, I believe we must have assurance that they will achieve the desired result.

I am informed that officials of the Environmental Protection Agency have on more than one occasion acknowledged the imprecision of our knowledge. I am told that on January 21 and 22 of this year in St. Louis, Agency personnel conceded that: the ozone standard is unattainable; high ozone episodes exist which may not be related to air stagnation; and we do not know, at this time, how to deal with high levels of oxidants in rural areas.

Most importantly, those officials were not able to claim that the Agency had the ability to predict what changes in ozone readings might be expected from a known tonnage of hydrocarbon abatement.

I must simply ask what then is the basis for denying permission to construct new hydrocarbon emitting plants, even when those plants will utilize technology which will abate the emissions to the greatest degree now possible.

The time has come, I believe, to get to the heart of this controversy. Let us marshal our scientific resources to improve our understanding of this problem, to decide what needs to be done in dealing with photochemical oxidants, and to determine how we might accomplish it.

I believe the study proposed by my amendment will help to provide some of the answers, and I urge its adoption.

Mr. RANDOLPH. I am sure that the able Senator from New York (Mr. Buckley), managing the measure for the minority, would be in agreement with what I shall now say.

During the consideration of this legislation for more than a year we were determined, insofar as possible, to have local units of government, the people living close to the development of these problems, understand exactly what we are doing.

I think the Federal-State study is a proper balance. I refer to my opening statement of yesterday when I indicated that it is the desire in this bill to have the States participate as fully as possible, certainly more fully than in the past, in the determination of the answers to many of the problems which are local in nature.

Here we would have the expertise coming from the knowledge of local conditions that could come to bear in the determinations of what this joint study responsibility would bring forth.

I accept the amendment and I do it feeling it is a refining, a further declaration, of what the committee itself has sought in the past and is now reducing to the amendment the Senator from Texas has just offered.

Mr. BUCKLEY. Before commenting on the Senator's amendment, I would like to ask whether there is implicit in such a study the suggestion that further controls on hydrocarbon and oxides of nitrogen emissions be suspended during the period. Is it the intention of this amendment or would it have the effect of causing a delay in the schedule for tightening the emissions?

Mr. BENTSEN. It does not call for delay; it calls for a study to determine whether the mechanics we are proceeding under are correct or not. It is hoped that during the time this study is taking place they will come up with some new evidence that will be better in accomplishing the objectives.

Mr. BUCKLEY. In the meantime would we proceed with the statutory schedules as contemplated?

Mr. BENTSEN. That is correct.

Mr. BUCKLEY. I totally agree as to the need for getting on top of all of this. It is very important that we know what we are doing, know what the cost will be to achieve our objectives, and know whether we are, in fact, achieving those objectives. I think, too, that the kind of study of which the Senator speaks is important in the achievement of the support of the American public for all of these measures. The only question I would raise is whether or not the study that is contemplated should be a part of the study to be conducted by the Air Quality Commission that is established by this bill.

Mr. BENTSEN. I did give consideration to that and that was a question to be resolved. It is just that with the technicalities of this particular problem, in talking about reducing vehicle miles traveled by 75 percent and given 10 years to accomplish that, that is a dramatic and very massive impact on the economics of that area.

I really want to highlight and high profile this kind of a study. I want to see the cooperative efforts with the State. We see our State board with a substantial degree of competence and a great concern in trying to zero in on this subject and work with the National Government on it.

Mr. BAKER. I do not wish to diminish the importance of this issue to the Senator's home State. I wonder, however, if the same thing might be accomplished without creating this agency if, in fact, the jurisdiction of the proposed Air Quality Commission were amended in order to make this one of the stated statutory obligations of the Commission and to provide for a procedure including, even, the attempt to contract with the National Academy of Science.

While I am sympathetic to his objective, I hate to see a proliferation of studies on this same issue. I am entirely willing to see that the essence of this proposal is mandated to the proposed air quality commission.

Mr. BENTSEN. I certainly do not want to see a proliferation of agencies either. I very much want, the strong input, and the high role of the State agencies in Government. The chairman of the council and the Governors of those States would be involved here, with the Administrator of the Environmental Protection Agency. We have a lot locked into the States, and I want to be sure that we give them a full opportunity. That is the reason I stated it this way.

Mr. BAKER. I would hope that we could reach some sort of an accord on this point because I do want to see the air quality commission which I proposed in the committee be the prime forum for the effort to hear and understand these problems.

I, of course, do not know who the members of the Air Quality Commission would be, but I would be hopeful that the appointive authorities would take account of the State interests and possibly appoint State officials for that purpose. I cannot assure the Senator in that respect, but I would hope that would happen.

There are public members provided for and there are nonpublic members provided for, and there is a sufficient range of flexibility required under the proposal to put Governors or other State representatives on there.

There is one difference that I note. The Air Quality Commission is supposed to report, I believe, in 3 years. The Senator's proposal is for 2 years.

Mr. BENTSEN. Yes.

Mr. BAKER. I would be perfectly willing to require an interim report on this subject by the Air Quality Commission in 2 years' time. We already have an interim report for 1977, for instance, on the oxides of nitrogen, which also are photochemical oxidants. So we could combine that requirement with the Senator's requirement for a 2-year report.

I would strongly urge the Senator from Texas to see if we could find a way to combine our objectives, because I think they are the same, and there is enough flexibility in both so that we could make them identical and not divide our effort.

Mr. BENTSEN. I would be willing to seek such a compromise, if I can be assured that I have the really strong input of the State agency in this matter, where they are participating in a major way.

Mr. BAKER. I am more than willing to assure the Senator in that regard. I would be more than happy to ask our respective staffs to try to work up language that would be mutually satisfactory in that respect.

Mr. RANDOLPH. Regarding the request of the Senator from New York (Mr. Buckley) in respect to the Senator's amendment, I would be agreeable to the study. I feel that it moves at a specific problem. Does the Senator from Texas feel that by stepping aside from the amendment for the time being, there could be discussions which would be fruitful with the Senator from New York (Mr. Buckley) and the Senator from Tennessee (Mr. Baker) in which perhaps I would participate? Would that be in accord with his understanding?

Mr. BENTSEN. I would be happy to set aside temporarily the amendment, with the consent of the Senate, and see if we could work out an area of compromise to accomplish the dual objectives of the Senators on the minority side and the Senator from Texas.

#### AMENDMENT NO. 1629

Mr. DOMENICI. I call up my amendment No. 1629, and ask that it be reported.

The PRESIDING OFFICER. Mr. Domenici's amendment (No. 1629) is as follows:

On page 28, after line 17, insert:

(1) (1) The Administrator, within ninety days after the date of enactment of the Clean Air Act Amendments of 1976 and from time to time thereafter as may be appropriate, shall publish proposed regulations for use by the Environmental Protection Agency and State and local agencies, in (A) determining the portion of ambient concentrations of particulate matter attributable to natural causes; and (B) discounting such particulate matter, when deemed appropriate, in administering sections 107(d), 110, and 113(g); and after a reasonable time for interested persons to submit written comments thereon (but no later than ninety days after the initial publication of the proposed regulations) shall promulgate such proposed regulations.

(2) For the purposes of this section "natural causes" shall include wind erosion of natural soils from farms, cleared land, and unpaved roads; dust storms; forest fires; sea salt and such other causes as may be specified by the Administrator.

Section 307(b)(1) of the Clean Air Act, as amended in 1970, is further amended to add the phrase "any regulations under section 110(i)," after the phrase "A petition for review of action of the Administrator in promulgating any national primary or secondary ambient air quality standard". [See sec. 403(a)]

Mr. DOMENICI. I believe that after the distinguished chairman of the full committee and I finish discussing the problem that this amendment attempts to raise, I will withdraw it, but I do think it raises a rather significant area. It is rather new.

The amendment addresses what I believe to be one of the most troubling conceptual problems embedded within the Clean Air Act—the issue of background particulates.

Basically, the issue is what happens when natural causes such as windblown dust, particularly in the arid west, cause violations of the national ambient standards for particulates. The answer is unclear. Under both the present Clean Air Act, and the committee's amendments, all future sources of particulate in areas which have not achieved the ambient standards for particulate could be prohibited. For rural, lightly populated regions of the Nation, such a result could prove unacceptable.

The difficulties of implementing existing law were outlined by the Environmental Protection Agency during litigation over the West Virginia State implementation plan. One of the issues was whether high background levels of particulates had caused overly stringent emission limitations on stationary sources. EPA rejected the argument that background particulates could be discounted the same as pollution in a facility's intake water is discounted under the water act.

EPA stated in the March 4, 1976, Federal Register:

Thus, while the argument can be made that technology-based water requirements should be structured so that no one source is penalized because of naturally-occurring pollutants in its intake water, the same argument cannot be made where the target in question (i.e. an ambient air quality standard) will, by its very nature, impose obligations that will vary in relation to the pollutant content of the air. That such target may be influenced by background concentrations and may thereby require substantial and perhaps burdensome, point source controls is admittedly one of the more onerous aspects of the national ambient air quality standards approach. Nevertheless, when health and welfare is at stake and air quality must be improved to a given level, there logically is no choice but to impose pollution limits on controllable man-made sources rather than attempt to limit naturally occurring (and, usually, uncontrollable) background sources.

I stress that this is a conceptual problem. The law and the amendments provide no relief in the case where nature, rather than man, violates the particulate standard.

The origins of this problem lie in the assumption that man is the principal polluter. The 1970 act was based on the reasonable premise that air pollution was the result of the careless practices of any industrialized society. As Senator Muskie noted during the September 21, 1970, floor debate, the 1970 act was:

A moment of truth: a time to decide whether or not we are willing to take the difficult but necessary steps to breathe new life into our fight for a better quality of life. This legislation will be a test of our commitment and a test of our faith.

In short, the 1970 act saw air pollution as a manmade phenomena subject to human solutions. Nature was the victim, not a transgressor.

During the committee's 1975 legislative hearings on the present amendments, the committee received little edification on the issue. Al-

though the scientific basis of the particulate standard was challenged, there was virtually no discussion on the legal and economic implications of natural violations of the national standards. In fact, the only mention I was able to discover was on Dr. John Finklea's statement that background levels of photochemical oxidants come close to the standard in several regions of the country; although scientists believe that since much of this is due to the long distance transport of man-made pollutants from urban areas, these background levels may not be caused by nature at all.

Mr. MUSKIE. Since neither the 1970 act, nor our recent hearings surfaced this issue, I ask the Senator what is the basis for his concern now?

Mr. DOMENICI. Obviously that particular question is well taken, and I have indicated that recent hearings have not surfaced the issue but the data base is very slight.

However, it is not totally lacking, and what I have seen greatly disturbs me. First, EPA has released some sketchy monitoring data which shows major portions of the country west of the Mississippi as exceeding the particulate standards. Second, EPA did a study in 1974 entitled "Investigation of Fugitive Dust" which studies the causes of particulate levels above the national standards in New Mexico, Nevada, Arizona, and California. Third, recent oil industry data from undeveloped Federal leases shows levels of particulates, hydrocarbon, and oxidant above the ambient standards. Fugitive particulate emissions from natural sources do appear to contribute to these high levels of particulate; but the extent of the contribution is unknown.

I certainly think that in light of our particular interest and our mutual interest that this is a matter that should be discussed.

Mr. MUSKIE. The committee addressed this problem on page 81 of the committee report, which notes that:

The States and EPA have recognized this problem of rural background particulates and discounted its effects where it is due to transitory, natural causes such as wind, and involves particulates generally of the substances and respirable sizes thought to affect public health.

The committee report goes on to note that we expect this policy of "administrative good sense" to continue. The limited extent of our knowledge did not permit us to address the problem in any other way.

Mr. DOMENICI. I am aware of that language; the purpose for my amendment is to legalize what I felt was in fact sound; perhaps I could call it, ad hoc administrative practice.

Mr. MUSKIE. I think it would be premature in light of the record to address this issue statutorily. At this time, preliminary EPA data from the Phoenix area indicates that fully two-thirds of the total 1975 particulate emissions were generated from fugitive emissions from motor vehicles on unpaved roads. Yet under the Senator's amendment, this source would be classified as a natural source, even though such emissions are manmade. In fact, EPA's ongoing review of the ambient particulate standards includes an effort to distinguish the relative toxicity of various sizes of particles. If particles in the size range of such manmade fugitive emissions are harmful to health, their control should not be foreclosed. The same may be true in agricultural areas.

My second concern is that the practical effect of his amendment could be to open up all of the State implementation plans to litigation. Any

amendment involving background level of particulates would have this result.

My feeling is that we should allow the ongoing EPA investigations of this issue to continue, and that we should monitor their progress. As more emissions data and health effects knowledge becomes available, we will be in a better position to assess the magnitude of the contribution of truly natural emissions to the background particulate problem.

Mr. DOMENICI. I still offer several comments. First, [his] critique of my amendment's definition of "natural causes" is well taken. EPA in their 1974 report distinguished between "natural" background from windblown dust and "fugitive" emissions from unpaved roads and agriculture; manmade emissions were the overwhelming contributor.

In addition to the considerable amount of work which remains to segregate these two categories of fugitive emissions in specific regions through what certainly will be more refined techniques, the ambient particulate standard should also be refined. EPA is currently assessing various strategies to supplement the existing standard.

Second, I believe our chairman's concern about opening up existing State implementation plans is well founded. Such an action on this particular count would be unjustified until we had reliable information upon which to act.

Mr. MUSKIE. I do feel uneasy about taking such a major step with such little data.

It strikes me that the charge of the National Commission under section 315(a)(1) clearly encompasses the subject. I believe that the combination of the discretion authorized under the present report language and the charge of the Commission offers us a better alternative than enacting this amendment into law.

Mr. DOMENICI. I withdraw my amendment. I do believe that the arguments with reference to continuing it here today and voting on it are on the side of withdrawal. I believe we have made some legislative history here.

I ask to have printed in the Record a Federal Register notice dealing with New Mexico, which demonstrates clearly that background particulates represent a serious potential problem for my State.

[FRL 584-5]

NEW MEXICO

#### Required Revision to Implementation Plan for the Pecos-Permian Basin Air Quality Control Region.

In this notice, the EPA Regional Administrator for Region VI finds that the implementation plan for the State of New Mexico is inadequate in its consideration of the air quality impact of particulate matter emissions from existing and projected potash plants in the Pecos-Permian Basin Air Quality Control Region (AQCR 155) for the attainment and maintenance of the primary national ambient air quality standards. He is, therefore, requesting that the State submit a revision to the plan to correct those deficiencies. The Regional Administrator has formally notified the Governor of this matter in a letter dated July 1, 1976.

#### DETAILED DISCUSSION OF ACTION

On May 31, 1972 (37 FR 10842), under section 110 of the Clean Air Act and 40 CFR Part 51, the Administrator approved the control strategy for the attainment and maintenance of the national primary and secondary standards for total suspended particulate in the Pecos-Permian Basin Region. The implementation plan was originally designed to attain these national standards by July 1, 1975. Furthermore, on March 8, 1973 (38 FR 6279), EPA disapproved all implementation plans with respect to maintenance of the national standards.

The Regional Administrator of the EPA, Region VI find that the presently approved control strategy portion of the implementation plan for particulate matter does not include control of potash plants for the Pecos-Permian Basin Region. As a result, it has been determined that the implementation plans is inadequate to attain and maintain the national primary ambient air quality standards for total suspended particulate from potash plants.

This finding is based on the October 1975 preliminary regional environmental analysis record on "Potash Leasing in Southeastern New Mexico" which indicated that the primary national ambient air quality standard for total suspended particulate are currently being exceeded. The analysis was done by the Bureau of Land Management, and involved the estimation of annual concentrations from existing potash plants. The State of New Mexico has also completed a preliminary analysis which involved the estimation of short-term particulate matter concentrations by applying the emission rates reported by the Bureau of Land Management. This analysis suggested that a majority of the existing potash plants are capable of exceeding the primary 24-hour maximum national standard for total suspended particulate. Furthermore, it is anticipated that this problem will be compounded by fugitive dust emissions and by the expected growth of the potash industry in this region, which will lead to increased emissions and increased particulate matter concentrations. The combination of these factors indicates that the plan is inadequate to attain and maintain the national ambient air quality standards for local suspended particulate.

The State of New Mexico is presently conducting a more detailed analysis which will consider point source particulate matter emission from existing potash plants and projected emissions from proposed new leases. The purpose of this analysis is to define control requirements. It is scheduled for completion by June 30, 1967, and will be made publicly available. Rather than wait for the completion of the analysis however, the Regional Administrator is calling for a plan revision now so that the appropriate agencies in the State may begin at once the process of developing their plan revision.

The Regional Administrator finds that a revision to parts of the control strategy for particulate matter in the applicable plan is needed and thereby requests the State to submit a revision.

Because the extent and nature of the attainment problem due to particulate matter emission from potash plants will not be fully known until completion of the analysis, the Regional Administrator does not intend at this time to establish either a date for submission of a control strategy that will provide for the attainment and maintenance of that standard or the period over which the plan would have to ensure maintenance.

The Regional Administrator will reevaluate the matter and subsequently decide what the submission dates shall be.

The Governor shall submit within 60 days of this notice, a letter of intent to the Regional Administrator, EPA, Region VI, which identifies the various action steps, along with target dates for completion, which the State will take to develop the plan revision in accordance with the requirements set forth in this notice. The State must also identify in the letter the agencies that have been given responsibility to prepare the plan revision.

All the applicable plan remains in effect until the plan revision is submitted by the State to EPA and is approved by EPA or until EPA promulgates substitute regulations.

This notice is not subject to rulemaking procedures. The need for a plan revision is based upon a technical finding of the Regional Administrator which shows that the control strategy for particulate matter in the Pecos-Permian Basin Region is inadequate and needs to be revised. Authority for such action is provided in sections 110(a)(2)(H) and 110(c) of the Clean Air Act, 1970. Ample opportunity for public comment on the Regional Administrator's determination of plan inadequately will be provided during the public hearing that the State is required to hold on the plan revision before submission to EPA if EPA must propose and promulgate its own regulations. EPA will provide opportunity for written comments and, if the State held no hearings on the revisions, will provide opportunity for a public hearing.

(Sec. 110 (a)(2)(H), Clean Air Act, as amended, (42 U.S.C. 1857c-5(a)(2)(H); sec. 110(c), Clean Air Act, as amended (42 U.S.C. 1875c-5(c)).

Dated: July 1, 1966.

JOHN C. WHITE,  
Regional Administrator,  
Environmental Protection Agency.

[FR. Doc. 76-20587 Filed 7-18-76; 8:45 am]

Mr. GRAVEL. I share the concerns expressed by the Senator from New Mexico (Mr. Domenici). The standards established in the committee's bill for particulate matter leave many questions unanswered. Many regions of the country face high concentrations of natural particulate matter which would be included in background levels for this pollutant in both the ambient level and the significant deterioration increment.

The inclusion of natural particulate in such background levels raises potential problems with respect to development in impacted regions. Many areas of Alaska have riverbeds and glacier areas which during certain times of the year produce high levels of dust. During this period the 24-hour standard for particulate matter will be violated, I am told by my State air quality people. This makes for a potential for limitations on development.

We have no conclusive evidence that natural particulates present any serious adverse health effects. I believe that it is essential that the issue of background level of natural particulates be resolved: I, therefore, support the efforts of Senator Domenici to provide the Environmental Protection Agency with some guidance on this important question.

I believe that the Senator from New Mexico has performed a great service in highlighting this very important problem that has to be faced. But it has to be faced, in my judgment, when we have more precise knowledge on which to act. The assembling of that kind of information, of course, is the reason this air quality commission will be put into effect.

I believe that the *modus vivendi* that has been in existence, in taking advantage of the flexibility in administration on the part of EPA, really assures us of some commonsense approaches, pending a more definitive attack on that problem.

Mr. McCLURE. I am a little sorry that the Senator from New Mexico withdrew the amendment, because I think the amendment was perhaps better than the existing statute.

I recognize the factors which led him to withdraw the amendment, but I also recognize the very great need for the statutory enactment which he sought to make which would better define what the committee was seeking to do in the first place.

I am sure the Senator from New Mexico remembers the long discussions we had in several committee sessions, both in the subcommittee and in the full committee, dealing with the question of background levels of pollutants, particularly those of particulates. The only conclusion we could come up with, as I recall, was that we do not know enough about it to say anything about it, so we will require each applicant to establish the baseline data himself, because no one else has any. So we transferred the burden for an unknown from a statute to the EPA and to the applicant, who must establish baseline data.

It seems to me that at the same time we are doing that, we will leave unsolved a very serious question regarding the background pollutants that the Senator identified in his amendment and such background pollutants in particulates such as the pollens, which sometimes are a very heavy burden in background particulates.

In his State and in mine—in any of the Western States that have large evergreen forests—the pollen that comes from those forests will

be the particulates that during some portion of the year are the dominant factor in background levels of pollution.

The question that seems to me to be left by the language in the bill and the approach we have taken is this: "How does an applicant measure the background level of pollutants?" I pose this question because it says that it is up to the applicant to determine the level at the time of the application.

Mr. DOMENICI. The Senator is speaking now of the nondegradation system?

Mr. McCURE. That is correct.

At what point in the calendar year is he going to file his application to determine the level of background pollutants at that time? That is what the statute says. I assume that he will measure background levels over a period of time, but will it be an average day and will it be the amount of the background level at the time the applicant files his application, or will it be the average of the 3-month period preceding? Will it be the highest level at any particular time?

That is the kind of question the committee was unable to resolve, and it seemed to me that the amendment by the Senator from New Mexico would have solved that by saying that you exclude those natural pollutants, you exclude those that are there always, so that you do not penalize anyone for the fluctuations in natural particulates and Mexico would have solved that by saying that you exclude those naturally occurs, that is not theirs. At the same time, I recognize that that uncertainty may best yield to the flexibility of a regulatory system rather than a statutory approach.

While I think that the Senator from New Mexico has made a significant contribution by the colloquy and by highlighting the question. I believe his amendment would have aided us in the applications which certainly will be troublesome.

Mr. DOMENICI. I wish to make two comments.

On a regionalized basis, the EPA is doing what my amendment would have made the national law. I trust that they will be prudent with the regions—that is, to go to the regions where the problems are obvious. I have described some of them. There is a lack of knowledge on our part as to what all this means, and there is a vacuum in terms of particulate mobility, which is not just natural but the manmade mobility which is now under scrutiny and study. There is a cooperative program in which manned balloons are being used. They are floating around in the particulate areas and are making measurements. That is a superb program, and it will give us information.

As to the question of baseline data, the Senator raised a good issue. He referred to applicants under the nondegradation permit system. The bill as drawn is going to be difficult, but it does require that there be some annualized evaluation, so that you would not pick the best or the worst of the 12-month year when you develop your baseline data, but, rather, some average based upon the best information that we can gather for a 12-month cycle.

Mr. McCURE. I recognize that there is no way of pinning down something as difficult to pin down as the ambient air itself. But even an annualized basis does not answer all the questions, because the emissions vary from year to year, as any hay fever sufferer can tell you. It is not just from season to season, it may be from year to year. That is

just one of the particulates. Perhaps you can say we will not have hay fever any more, we will have pollutant fever. But that is the kind of problem we are dealing with.

#### AMENDMENT NO. 1798

Mr. RANDOLPH. I think earlier today, we had a discussion by Senator Buckley which pointed up the necessity for this to be, in a sense, the people's bill, for the people to understand the bill, the people to know the responsibilities they share with a bureaucracy in carrying forth the provisions of this bill.

With that in mind, I call up amendment 1798.

The amendment is as follows:

On page 85, line 13, insert the following: between the words "and" and "prevention" the words "in accordance with subsection (i) of this section the".

On page 86, line 8, insert between the words "Commission" and "shall" the words "shall be appointed within sixty days after enactment of this section and".

On page 87, line 4, insert after the word "(e)" the following phrase: "(1) Except as provided in paragraph (2) of the subsection,".

On page 87, between lines 7 and 8, insert the following new paragraph:

"(2) A report on the results of the study and investigation of the Commission authorized under subsection (i) of this section, together with any appropriate recommendations, shall be submitted not later than two years after the date of enactment of this section."

On page 88, between lines 2 and 3, insert the following new subsection:

"(i) (1) The Commission shall, in carrying out the study authorized under this section, give priority to a study of the implementation of the provisions of subsection (g) of section 110 of this Act.

"(2) In carrying out the authority of this subsection the Commission shall study, among others, the following:

"(A) whether the provisions relating to the designation of, and protection of air quality in class I regions under this Act are appropriate to protect the air quality over lands of special national significance, including recommendations for, and methods to (i) add to or delete lands from such designation, and (ii) provide appropriate protection of the air quality over such lands;

"(B) whether the provisions of subsection (g) of section 110 of this Act, including the three-hour and twenty-four-hour increments, (i) affect the location and size of major emitting facilities, and (ii) whether such effects are in conflict or consonance with our national policies regarding the development of such facilities;

"(C) whether the technology is available to control emissions from the major emitting facilities which are subject to regulation under subsection (g) of section 110 of this Act, including an analysis of the costs associated with that technology;

"(D) whether the exclusion of nonmajor emitting sources from the regulatory framework under this Act will affect the protection of air quality in class I and class II regions designated under this Act;

"(E) whether the increments of change of air quality under this Act are appropriate to prevent significant deterioration of air quality in class I and class II regions designated under this Act; and

"(F) whether the choice of predictive air quality models and the assumptions of those models are appropriate to protect air quality in the class I and class II regions designated under this Act for the pollutants subject to regulation under subsection (g) of section 110 of this Act.

"(3) For the study authorized under this subsection there shall be made available by contract to the Commission from the appropriation to the Environmental Protection Agency for fiscal year 1977 the sum of \$1,000,000."

The issue of significant deterioration in the quality of air has drawn more public attention than any other one feature of the Clean Air Amendments of 1976. The concern that has been expressed is an understandable concern. Certainly, the procedures established in this area

by the bill are intended to implement the policy which states, very clearly, that clean air areas should be protected.

It should be obvious that the implications of such a policy, as it is carried forward, will be substantial. There are, however, some legitimate questions about the long-term impact of a nondeterioration policy.

I believe that the approach adopted and reflected in Senate 3219 is a correct and a well-reasoned approach.

The nondeterioration provisions of the bill were agreed to after the most careful consideration. We received all available information and consulted with many, many individuals and many, many organizations. These individuals and organizations represented a diversity of viewpoints. The provisions in the bill represent, I think, a positive improvement over the current Environmental Protection Agency regulations on the prevention of significant deterioration.

The members of our committee believe we know what will take place if this legislation is implemented. We are convinced that it would be unwise to delay the establishment of a procedure to prevent deterioration of air quality in areas that are relatively free of pollutants or to leave the flawed Environmental Protection Agency approach in place. I do not believe that we should postpone action, because it is important to protect these areas. The pressures of our growing—we hope it is a growth society of which we are a part—and highly industrialized society threaten those areas which, so far, have been only slightly affected by pollution.

Our experience has indicated how difficult, expensive, and time consuming it is to correct the environmental abuses that have taken place in past years. It is far more prudent to avoid severe pollution conditions than it is to permit their development and then to attempt to correct them. This is not a criticism; it is an observation that, too often in our country, we act after the fact, not before the fact. We need, whenever possible, to have people understand what the problems are that can develop so that they, in the process of consideration and action, can be a party to whatever is done.

The comprehensive nature of the nondeterioration policy requires that it be carefully monitored, especially as to its long-term effects. I have introduced, accordingly, an amendment requiring that our Commission on Air Quality give priority to a study of the implementation of the nondeteriorating provisions.

The Commission, which is established by this bill, was chosen in this instance to avoid the creation of another body or the placing of responsibility for studying air pollution matters and thus the impact of the nondeterioration program is well within its mandate.

I think it was proper that the amendment offered by Senator Bentsen earlier today, for the study of a particular problem that he has in Texas and perhaps in other areas, might be incorporated in the work of the Commission, keeping in mind the 3-year limitation on the Commission report. There is concern, that the value of such a study would be diluted if a long period of time were required for the Commission to be organized and then to get down to work. For that reason, the amendment that I offer provides that the members of the Commission shall be appointed within 60 days of the enactment of this legislation. A report on non-deterioration would be submitted to Congress within a

period of 2 years. This would provide a sufficient time for the non-deterioration section to be implemented and for the various components of the problem to be properly assessed. The amendment calls particular attention to several features which, I think, we must give attention to during the study.

These include the adequacy of the provisions for the designation of class I regions and protection of air quality in those regions.

The 3-hour and 24-hour increments allowed under the nondeterioration provisions are certainly critical to the control of emissions in the affected areas.

These limitations on additions to existing emission levels will certainly influence the extent to which development can take place in the protected areas.

The study must include the impact of statutory increments and their effect on the location and size of major emitting facilities, whether these effects are consistent with other national policy regarding the development of these facilities.

The study will examine what technology is available to properly control emissions subject to regulation under the program.

Only major emission sources are covered by the legislation, so the study that is proposed would bring an examination of the effect to nonmajor sources on air quality.

The purpose of the program of nondeterioration is to protect air quality.

The Members of this Congress and the American people mean to do that, keeping in mind, of course, the energy problems, the economic problems, the social problems, all the problems that are inherent in the complex problem overall that we are considering. But we do believe the people of the United States are committed to a high quality of air, commensurate with the other matters I have discussed.

This is a program in which we want to achieve certain goals, but whatever these achievements may be they will not be complete without our realizing that air quality for the American people is a matter of priority.

I suggest this is not the last time Congress will be called on to legislate in air pollution control matters. We have addressed this subject before, and I am sure we will do it again as we make progress under the programs and as conditions change. Sometimes, perhaps it is even necessary to have a pause, and I have used that word because I want as one member, not just as the chairman of the committee, to try to be very reasoned about my position in these matters.

The National Commission on Water Quality was established as a part of a major revision of our Federal Water Pollution Control Act which became law in 1972. That commission was charged specifically with providing information to assist Congress in determining the future program.

The National Commission on Air Quality as it is envisaged in this bill would be authorized to carry out the same functions, as I have earlier said, with respect to the air pollution program.

The study I have in this amendment is consistent with philosophy underlying the establishment of both the prior Water Commission and now, the Air Commission.

The prevention of any significant deterioration of air quality is highly desirable and is an essential part of our total pollution effort.

It is equally important that we closely watch the results of our efforts. We must monitor the program. We must have the oversight hearings. We must be very careful to see that the intent of Congress is carried out, as well as the actual language of the law.

Mr. Moss. Do I understand the Senator's amendment to be that this study would be conducted after enactment of this bill and within the time limits the Senator was talking about?

Mr. RANDOLPH. That is correct.

Mr. Moss. It would, therefore, presuppose the passage of all the terms of the bill, which would make it different from the one I proposed where section 6 would not go into effect until after the study was completed; is that the difference?

Mr. RANDOLPH. That is correct. It applies to the bill as brought from the committee.

I am offering the amendment to that measure.

Mr. BUCKLEY. Am I correct in my understanding that the proposed study would in no way delay the implementation of the statutory program contemplated in this bill dealing with the problem of nondeterioration?

Mr. RANDOLPH. It would not delay it.

Mr. BUCKLEY. Section (C) on page 3, the section dealing with the examination of technology, would not in any way interfere or delay the action by the States in determining the best available technology?

Mr. RANDOLPH. The Senator is correct.

I am not certain that this is an amendment on which the Senator from Maine (Mr. Muskie) or the Senator from New York (Mr. Buckley) might wish a rollecall. I think it is highly important, but I would rest the matter with the judgment of the Senator from Maine.

Mr. MUSKIE. I think it might be useful to respond for this reason: I have read in the public press and elsewhere more misinformation and more distortion of what the committee bill does on the question of nondegradation than on almost any other legislative issue I have ever been exposed to. It might be a useful way to begin to focus the attention of the Senate on the fact that we are about to begin debate on that issue, hopefully to clarify the issue, hopefully to lay a basis of understanding upon which the Senate can act. In the first place, after glancing over an editorial in today's Wall Street Journal, I am just amazed that a presumably enlightened publication would express such an unenlightened view as to how we arrived at the conclusions that resulted in the committee bill.

I ask, that there be printed in the Record a memorandum dated June 26, 1975, prepared by the subcommittee staff for the members of the Environmental Pollution Subcommittee, which undertakes to analyze the question of how much growth is allowed by the Environmental Protection Agency's nondegradation scheme. The Wall Street Journal entitles this article "Senator Muskie's No-Growth Bill."

#### MEMORANDUM

To: Members of the Environment Pollution Subcommittee.

From: Subcommittee Staff.

Subject: Growth Allowed Within EPA's Nondegradation Scheme.

## 1. THE CONCEPT OF CLASS II

EPA defined the Class II area specifically to allow development of "average sized" facilities within the Class II region. Class II was not developed by relating it to any specific ambient air quality, such as visibility. Class II does not establish a new kind of national ambient air quality standard, but instead states how much *additional* pollution could be added to any area which presently has air cleaner than national ambient air quality standards. Areas designated as Class II, whether moderately clean or extremely clean, would be allowed to add the exact same increment of pollution to whatever existing background levels are present.

EPA examined the average plant being constructed in the industrial categories most likely to have pollution problems and then projected the probable air quality impact of construction of such sources using the best available control technology. The Agency concluded that "... typical coal gasification plants, oil shale processing facilities, and petroleum refineries would not be expected individually to exceed the Class II increments in most areas. However, the Class II increments would prevent the aggregation of such sources within close proximity of each other." (Technical Support Document—EPA Regulations for Preventing Significant Deterioration of Air Quality, EPA, January 1975, p. 20.) The same statement holds true for the average sized plants in the following categories: fossil fuel fired steam electric power units, municipal incinerators, kraft pulp mills, iron and steel mills, coal cleaning plants, sulfur recovery plants, lime plants, Portland Cement plants, phosphate rock processing plants, petroleum refineries, by product coke oven batteries, sulfuric acid plants, carbon black plants, primary aluminum plants, primary zinc smelters, primary copper smelters, fuel conversion plants and primary lead smelters. For many of these sources, the average sized plant would be substantially lower than the increment allowed.

## 2. STIMULUS FOR TECHNOLOGICAL INNOVATION

The size of the facility or the number of identical facilities located within a Class II area is limited only by the existing technology for controlling emissions. As that technology increases in sophistication, larger facilities and facilities spaced in closer proximity would be allowed within the Class II increment.

## 3. POWERPLANTS

Much of the discussion has revolved around plants, since the size of the average new power plant has grown much more than other sources and presents the greatest difficulty in fitting within a Class II area. EPA concluded that a 1000 megawatt power plant could fit within a Class II area, and "assuming that such a source used up 90 percent of the allowable increment in a Class II area, a similar source could not be located within 25 miles of the first plant". (Technical Support Document, p. 20.)

The location chosen for a site within the Class II area is of critical concern. When EPA examined existing coal burning power plants and projected the impact of such plants in a Class II area, they discovered one 1300 megawatt power plant which used only half of the increment allowed under the Class II designation; this occurred principally because of the design of the power plant and surrounding terrain and meteorological conditions.

## 4. OIL SHALE

Industries interested in establishing oil shale facilities in western States have raised objections to the entire EPA nondegradation scheme. One of the objections raised was that such controls would not allow 8 to 10 oil shale plants to be located in close proximity to each other. If the industry assumption of the technology to be used are correct, this may be true, but these points should be considered:

(1) The industry has not established the technology which would be used to process oil shale and has not done modelling as to the probable air quality impact of such technology; such modelling would be difficult since the choice of technology has not been made.

(2) Even if the projected "guess" of the Federal Energy Administration regarding the most probable "typical" oil shale facility is used, approximately

two such facilities could be located at the same site in a Class II area, with similar clusters located 20 to 30 miles apart. (Task Force Report—Oil Shale, Project Independence. FEA, November 1974, p. 446.)

(3) Air quality considerations seem to be less important in constraining oil shale development than factors such as uncertainty regarding technology, costs of processing, availability of water for processing, and the international price of oil and related fuels.

#### 5. STEEL MILLS

Administrator Train, in a letter to Senator Muskie dated June 5, 1975, indicated that the Agency's projections of the air quality impact of an integrated steel mill presently being planned for Northern Indiana with a capacity of 2.3 million tons per year would increase the 24-hour particulate matter concentration by about 2 micrograms per cubic meter (under conditions which would result in the *highest* concentration for that plant).

Since the Class II increment allows 30 micrograms per cubic meter of particulate matter over a 24-hour period, this would allow considerable room for further development within the Class II increment if such a facility were built.

#### 6. PETROLEUM REFINERIES

The Class II increment was designed to allow a petroleum refinery with the capacity of 150,000 barrels per day to be constructed without consuming the entire air pollution increment available. Industry data indicates that the average refinery is 100,000 barrels per day with the largest planned facility being 200,000 barrels per day.

#### 7. THE QUESTION OF SIZE

The Class II increment raises considerable difficulty for the planned development of extremely large power plants (3000 megawatts and more in some cases) clustered closely around the energy resource to be used (principally mine-mouth power plants). The Class II area would not prohibit such plants completely, but would require either (1) a scale-down in the size of plants planned, (2) a reduction in the total number of such plants, (3) the development of substantial improvements in pollution control technology, (4) cleaning and preparation of the fuel or improved combustion, or (5) a combination of all of these.

Such limitations would restrict some growth. They could also lead to smaller plants. This would mean less of a "boom and bust" cycle for the region since the resource would be used at a slower rate and would sustain the production activity for a longer period of time. If pollution control technology were advanced as a result of the restrictions, then the total emissions from the facility over its lifetime could be substantially reduced in total. And recreation resources close to such facilities would remain viable tourist attractions.

#### 8. INCREMENTS FOR CLASS I AND CLASS II

For reference, the increments allowed under the EPA regulations are included below. The second Table includes increments which would be suggested for other regulated pollutants should the Members decide to cover all regulated pollutants in such a classification scheme.

TABLE I.—EPA REGULATIONS

Pollutant	Class I (micrograms per cubic meter)	Class II (micrograms per cubic meter)
Particulate matter:		
Annual geometric mean.....	5	10
24-hr maximum.....	10	30
Sulfur dioxide:		
Annual arithmetic mean.....	2	15
24-hr maximum.....	5	100
3-hr maximum.....	25	700

TABLE II.—INCREMENTS FOR OTHER REGULATED POLLUTANTS

Pollutant	Class I	Class II
Nitrogen dioxide ( $\mu\text{g}/\text{m}^3$ ):		
Annual geometric mean.....	1.0	9.0
24-hr maximum.....	3.0	60.0
3-hr maximum.....	15.0	400.0
Carbon monoxide (p.p.m.):		
8-hr maximum.....	.2	2.5
1-hr maximum.....	1.0	19.0
Hydrocarbons: 3-hr maximum ( $\mu\text{g}/\text{m}^3$ ).....	16.0	50.0

Mr. MUSKIE. Second, the question that arises is whether or not the public interest requires something by way of protection beyond the primary and secondary standards.

The primary and secondary standards were devised as a way of cleaning up dirty air areas. They are minimal standards which recognize the practical limitations of restoring to their pristine condition the areas in which the health and public welfare requirements of the American people are not being met.

There is the attempt being made to use those standards which were designed as minimal standards for the dirty air areas of the country as adequate standards for the clean air areas of the country.

I can understand that that kind of rationalization could take place among people who do not understand the difference between the national primary and secondary standards and for those required in the national interest in the many clean areas of the country.

But, for those puzzled about that question, I ask that there be printed in the Record a letter dated October 10, 1975, from Russell Train, the Administrator of the EPA, in which he undertakes to outline the inadequacies of the national primary and secondary standards in terms of public interest.

U.S. ENVIRONMENTAL  
PROTECTION AGENCY,  
Washington, D.C., October 10, 1975.

HON. EDMUND S. MUSKIE,  
*Chairman, Subcommittee on Environmental Pollution, Committee on Public Works, U.S. Senate, Washington, D.C.*

DEAR MR. CHAIRMAN: Your letter of June 6, 1975, requested comments on the adequacy of the Federal secondary ambient air quality standards. As you know, secondary standards have been set for carbon monoxide, hydrocarbons, photochemical oxidants, nitrogen dioxide, sulfur dioxide, and suspended particulate matter. The numeric values of these standards are summarized in the enclosed table.

For particulate matter, an annual mean concentration of  $60 \mu\text{g}/\text{m}^3$  and a mean 24 hour concentration of  $150 \mu\text{g}/\text{m}^3$  have been set as the secondary standard. Suspended particulates are known to have effects on vegetation, visibility, and manmade materials. At concentrations of  $150 \mu\text{g}/\text{m}^3$ , visibility may be reduced to as low as five miles. The 24 hour standard was designed to prevent such deterioration. When annual concentrations exceed  $60 \mu\text{g}/\text{m}^3$ , accelerated rates of corrosion of steel and zinc panels have been noted. The annual standard was set to avoid this type of damage.

There has been no new evidence to indicate that total suspended particulates, as a conglomerate, have any pronounced effect on public welfare below the levels of the existing secondary standards. However, recent advances in instrumentation and monitoring methodology permit more definitive effects investigations of fine particulates, trace elements, and heavy metal components of the total suspended particulate mix in the atmosphere. For example, specific work is in progress on the fate and effects of cadmium and lead on plant and soil systems. When evidence on components of total suspended particulate matter indicates the need for control action, appropriate controls will be instituted for specific substances.

The primary and secondary carbon monoxide standards are identical, based on health effects. This standard is designed to limit the level of carboxyhemoglobin in the blood of non-smokers to 1.5%. Increased cardiovascular difficulties among individuals suffering from atherosclerotic heart disease have been identified in relation to these levels of COHb. Plants are relatively insensitive to CO at the lower levels that have been found to be toxic to animals. Concentrations above  $115 \text{ mg/m}^3$  are required to produce detrimental effects on certain higher plants. Evidence does not demonstrate an association between existing ambient levels of CO and adverse effects on other aspects of human welfare. It is therefore felt that this secondary standard is well established as protective of welfare and will not foreseeably need revision.

The standard for hydrocarbons was established for use as a guide in devising implementation plans to achieve oxidant standards. At the time the standards were set there was no known direct adverse effect on human health and only minor probability for plant damage to sensitive plants at the ambient levels. The standard was set as a guide for controlling photochemical oxidants, which do have an effect on health and welfare.

The primary and secondary standards for photochemical oxidants are also identical. Damage by the principal photochemical oxidant, ozone, has been noted on vegetation and manmade materials. Plant species vary in their sensitivity to ozone and other oxidants. Toxicity also varies with the composition of the oxidants. Injury has occurred experimentally in the most sensitive species after exposure to  $60 \text{ } \mu\text{g/m}^3$  of ozone for 8 hours. Crop losses could occur as the result of planting genetically uniform, susceptible varieties. Therefore, the current standard,  $160 \text{ } \mu\text{g/m}^3$  for one hour, may not protect all vegetation. Little is known regarding the tolerance of plants under field conditions. The presence of other pollutants and changes in environmental conditions may effect the tolerance of plants for photochemical oxidants.

Photochemical oxidants' effects on manmade materials center on the effects of ozone on elastomers and textile dyes. Many elastomers, including natural rubber, are chemically prone to oxidation and therefore, to ozone attack. Cracking of rubber has been noted at  $40 \text{ } \mu\text{g/m}^3$ . Background levels of naturally occurring ozone range up to  $100 \text{ } \mu\text{g/m}^3$ . Industry has developed antiozonant additives to protect rubber products against damage. Some important textile dyes, particularly certain blue dyes, used in acetate and polyester/cotton fabrics, and nylon carpets, are susceptible to fading during exposure to ozone. This effect may also occur at background level exposure. To prevent or mitigate fading by ozone, the textile industry must use more resistant dyes and/or inhibitors; these increase the cost of the item. The current secondary standard for photochemical oxidants appears to represent a level sufficient to prevent significant deleterious effects on welfare resulting from anthropogenic sources.

The primary and secondary standards for nitrogen dioxide are identical, being an annual concentration not exceeding  $100 \text{ } \mu\text{g/m}^3$ .  $\text{NO}_2$  has been shown capable of producing acute damage to plants; however, the levels required are substantially above that of the standard. For example, reduced yields of navel oranges were encountered when exposed  $470 \text{ } \mu\text{g/m}^3$  for eight months. The current standard appears protective of welfare against damage from direct exposure to atmospheric  $\text{NO}_2$ .  $\text{NO}_2$  may also cause indirect damage to the extent that it contributes to the formation of the nitric acid in acid precipitation. Nitric acid constituted 24% of the acid in precipitation during 1972-1973 in the Eastern U.S.

The secondary standard for sulfur dioxide is set at  $1300 \text{ } \mu\text{g/m}^3$ , maximum three hour concentration, not to be exceeded more than once a year. This standard was set at the level necessary to protect sensitive species of plants such as maple trees, spinach, and sweet potatoes. Damage to those species has been noted at concentration levels of 2620 to  $10,480 \text{ } \mu\text{g/m}^3$  over periods of  $\frac{1}{2}$  hour. No other welfare effects have been noted at concentrations lower than those causing damage to sensitive plants. Conclusive data are lacking on synergistic effects of sulfur oxides and other pollutants, but preliminary results of work being conducted at EPA's Corvallis Environmental Research Laboratory indicate that a sound basis for standards based on long term growth and processes effects caused by low concentration of sulfur oxides and ozone may be developed in the future.

The phenomenon of acid rainfall is of concern to this agency. A growing body of evidence suggests that acid rain may be responsible for substantial adverse effects on the public welfare. Such effects may include acidification of lakes, rivers, and groundwaters, with resultant damage to fish and other components of aquatic ecosystems, acidification and demineralization of soils, reduction of forest productivity, and damage to crops. These effects may be subject to cumulative

build-up as a result of years of exposure to acidic precipitation, but some may also result from "peak" acidity episodes.

Unfortunately research into the acid rainfall problem is in its infancy. A brief evaluation of the research presented at the First International Symposium on Acid Precipitation is attached. The mechanism by which air pollution contributes to acid precipitation is poorly understood. At this time, we are unable to definitively link emissions in one area with more acidic precipitation in another. Further research is necessary to determine what pollutants and levels of those pollutants significantly contribute to acid rainfall, and to draw pollution emission relationships to environmental damage.

Considerable work, with good progress, has been underway for the past several years to establish a more meaningful basis for setting a comprehensive sulfur oxide, sulfate, and acid rain complex of standards which addresses the total problem of sulfur mass balance. It is anticipated that plant growth data closely approximating the effect of exposure to ambient levels will result from research efforts which apply probability models based on existing air quality data and which simulate the effects of acid precipitation on the soil and growth processes. These data will provide a sound basis for meaningful economic trade-off analyses.

It has been noted that a 24 state area of the Northeast (which has been identified as having suspended sulfate levels significantly higher than the rest of the nation) is almost identical with the area impacted by precipitation of pH 5 or less, i.e., precipitation which is highly acidic. Assuming that  $\text{SO}_2$  is one of the more important agents in forming the regional acid precipitation, a dramatic increase in sulfuric acid-related precipitation over the next few years is not expected as trends in acid sulfate aerosol levels in this area are not expected to increase substantially.

In summary, as more data concerning long term accumulations becomes available, the secondary standards may need to be reevaluated to determine that they truly are protective of the public welfare. Future regulatory strategies will need to consider the synergistic effect of pollutant mixes, long term low level exposures, and the acid precipitation problem. Prior to modification of the current standards, a sound technical understanding is necessary of processes by which specific pollutants emitted are transported, converted in the atmosphere, interact with other pollutant, and inflict damage to welfare.

Sincerely yours,

RUSSELL E. TRAIN, *Administrator.*

#### NATIONAL AMBIENT AIR QUALITY STANDARDS \*

Pollutant	Averaging time	Primary standards <sup>b</sup>	Secondary standards <sup>c</sup>
Particulate matter <sup>d</sup>	Annual (geometric mean).	75 $\mu\text{g}/\text{m}^3$	60 $\mu\text{g}/\text{m}^3$ .
	24-hr	260 $\mu\text{g}/\text{m}^3$	150 $\mu\text{g}/\text{m}^3$ .
Sulfur dioxide	Annual (arithmetic mean).	80 $\mu\text{g}/\text{m}^3$	
		(0.03 p.p.m.)	
	24-hr	365 $\mu\text{g}/\text{m}^3$	
		(0.14 p.p.m.)	
	3-hr		1,300 $\mu\text{g}/\text{m}^3$ (0.5 p.p.m.).
Carbon monoxide	8-hr	10 $\text{mg}/\text{m}^3$	
		(9 p.p.m.)	
	1-hr	40 $\text{mg}/\text{m}^3$	Same as primary.
		(35 p.p.m.)	
Photochemical oxidants <sup>e</sup>	1-hr	160 $\mu\text{g}/\text{m}^3$	Do.
		(0.08 p.p.m.)	
Hydrocarbons (non-methane) <sup>f</sup>	3-hr	160 $\mu\text{g}/\text{m}^3$	Do.
	(6 to 9 a.m.)	(0.24 p.p.m.)	
Nitrogen dioxide <sup>g</sup>	Annual (arithmetic mean).	100 $\mu\text{g}/\text{m}^3$	Do.
		(0.05 p.p.m.)	

\* All standards are specified as not to be exceeded more than once per year. The measurement methods are also specified as Federal reference methods. The air quality standards and a description of the reference methods were published on Apr. 30, 1971 in 42 CFR 410, recodified to 40 CFR 50 on Nov. 25, 1972.

<sup>b</sup> Set for protection of health.

<sup>c</sup> Set for the protection of welfare, which, in the words of the act "include but is not limited to, effects on soils, water crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and wellbeing (sec. 302(b)).

<sup>d</sup> The secondary annual standard (60  $\mu\text{g}/\text{m}^3$ ) is a guide to be used in assessing implementation plans to achieve the 24-hr secondary standard.

<sup>e</sup> Expressed as ozone by the Federal reference method.

<sup>f</sup> This NAAQS is for use as a guide in devising implementation plans to achieve oxidant standards.

<sup>g</sup> No Federal reference method currently in effect.

SUMMARY OF THE FIRST INTERNATIONAL SYMPOSIUM ON ACID PRECIPITATION AND THE FOREST ECOSYSTEM, OHIO STATE UNIVERSITY, MAY 12-15, 1975

1. The phenomenon of acid precipitation was well documented. The large majority of participants agreed that increases in sulfuric and nitric acid stemming from anthropogenic sources, are generally responsible for lowering the pH of rainwater, although other substances may also contribute.

2. Acidic precipitation is a pervasive local, regional and international problem. In this country, the entire northeastern quarter is affected including seemingly remote areas such as Hubbard Brook, New Hampshire. In addition, sub-regional areas throughout the United States are affected by local sources. The extent of the areas impacted by acidic precipitation is increasing.

3. The mechanisms by which sulfur is oxidized to sulfate are not well understood, and there are many competing theories. It is thus impossible, given the present state of the art, to relate emissions from one area to lower rainwater pH in another.

4. Ecological effects are very poorly understood. Many papers were speculating and most experiments, either used unrealistic application of acid rain, or lacked adequate controls. It is thus currently impossible to evaluate the impact of acid precipitation on forests in any defensible manner.

5. Increased soil acidity resulting from continual exposures to acid rainfall could have serious consequences in terms of increased leaching of plants nutrients and changes in the basic chemical properties of the soil systems. Concisely, many soil systems have tremendous differing capabilities. A good deal is known concerning the basic chemistry of these systems, but it appears that the potential application of available knowledge and expertise for predicting the magnitude of these effects has not been adequately utilized.

Mr. MUSKIE. It is on the basis of those kinds of analyses that the Committee arrived at the conclusions which are reflected in the Committee bill, and I have included them in the Record so Members can read them and understand, at the very least, that the Committee did not casually and arbitrarily pick some numbers out of the air to impose on the country.

Third, as I understand the amendment of the distinguished chairman of the Public Works Committee, what he undertakes to make clear is what I think the committee intended, that is, that the Commission established by the committee bill include in its studies the questions raised in connection with this nondegradation issue.

I think it is an appropriate clarification; it is an appropriate study, I think for the purpose of focusing the Senate's attention on the fact that the discussion of that very controversial issue has begun and that we are putting these matters in the Record for their information, that a rollcall vote at this point might be in order.

Mr. BUCKLEY. I think it would very definitely be in order, in fact, a signal that we are coming into the area that has stirred up the greatest amount of controversy.

I believe the study recommended by the Senator from West Virginia (Mr. Randolph) is one that has to be made, and it is, I think, entirely appropriate it be highlighted in the legislation authorizing the establishment of the commission.

Mr. RANDOLPH. I ask for the yeas and nays on my amendment.

Mr. MOSS. A few minutes ago I engaged the Senator from West Virginia in colloquy about his amendment, at which time he was talking about it being an amendment to make a study of the effects of nondegradation or nondeterioration. The reason I engaged him in colloquy was to determine whether or not this study would go into effect after the bill became law and based on the terms of the bill.

He confirmed the fact that it would and that this would include, of course, section 6 which deals with this problem.

The thing that I wanted to bring to the attention of the Senate and the thing that we need to be concerned with is that if this amendment of the Senator is adopted and the Members of the Senate then say, "Well, we voted for a study," we have still not accomplished what we needed to do. That is, have the study before we had the non-degradation section in place.

I think the Senator from West Virginia himself discussed the fact that he recognized the futility of studying after the fact and then trying to undo something, as against withholding action until the study is completed and then taking the positive action to put in place whatever the study would indicate is acceptable.

The most controversial issue in this year's Clean Air Act amendments is the policy of nondeterioration proposed by section 6. If successfully enacted, this section would establish Federal law preventing the deterioration of air quality in those areas of the country with air quality better than that required under the National Ambient Air Quality Standards—NAAQS. I have introduced amendments which would delete section 6 from the bill and which would require a comprehensive study to be made over a period of 1 year. This study is for the purpose of thoroughly evaluating the economic impacts of the proposed nondeterioration policy. In order that my amendments might be seen in their true perspective, I wish to make several important points relative to their thrust and impact.

#### THE NONDETERIORATION ISSUE IS MORE ECONOMIC THAN ENVIRONMENTAL

I again state that the nondeterioration issue only involves areas of the Nation which have air quality better than that required by the national ambient primary standards—set to protect human health with an adequate margin of safety—and national ambient secondary standards—set to protect welfare, including damage to crops, and so forth.

Proponents of the nondeterioration provision of the bill claim that the ambient standards are not adequate to protect human health and welfare. If this is true, let them come forward with facts. If there are known risks we are needlessly taking, EPA is required under section 109 of the existing Clean Air Act to take steps to tighten these ambient standards. EPA has not taken such steps.

The health issue must therefore be viewed as relatively unimportant to those responsible for enforcing these standards. Why should additional standards be enacted if those already in effect are not being enforced? Proper administrative procedure surely requires that existing law be enforced before new law on the same subject increases the burden of enforcement.

The questionability of the health issue suggests that the overriding economic issue deserves greater attention than the environmental one. What will be the increased cost for utilities and goods and services? What will be the effect on the employment situation? What domestic natural resources will go undeveloped? What effect on social mobility? What effect on the relationship between Federal and State governments? What total price are we willing to pay for that last increment of clean air? I have no doubt that as our technology develops over the next several years, it will be possible to have pristine air without severe economic and social dislocations. This will come about with develop-

ment of cleaner sources of energy. However, legislating "nondeterioration," now under the scheme provided in section 6 of this bill, is likely to cause much more severe damage to the total quality of life of our citizens, than any shortrun incremental air quality benefits it may provide.

Mr. WILLIAM L. SCOTT. I spoke briefly with the author of the amendment now before us. From my own analysis I take it that the amendment he has offered would not later preclude an amendment that I have, amendment 1617, which would strike the entire portion of the bill that deals with nondegradation.

Also, I have a separate amendment that is not printed which would provide that during the period of a study, whether it is the period provided in the original bill, the period provided by the distinguished Senator from West Virginia, or the period that is to be proposed by the distinguished Senator from Utah, the Sierra Club against Ruckelshaus holding would not be in effect; that we would not have the nondegradation policy during that period of time.

With that understanding I have no objection to the amendment of the distinguished Senator from West Virginia. Studying the matter, gathering more knowledge, is a good thing, but it is like referring something to a committee. I do not think we ought to be killing the amendment that I am going to propose and that the distinguished Senator from Utah is going to propose. I do not believe that is the intention of the distinguished Senator from West Virginia in making this proposal.

I intend to vote for the amendment of the distinguished Senator.

Mr. Moss. I am happy to respond to the question of the Senator from Virginia as to why I feel this matter must be put in perspective now.

When my amendment was offered and circulated and began to get some attention, immediately thereafter the amendment of the Senator from West Virginia appeared. It took up the study part but did not suspend section 6. Immediately, I began to detect some feeling among Senators who said, "Well, there is an easy way out, then. We just vote for the study part and we can say we voted to make the study, but section 6 would go into place." That is what I am concerned about.

Mr. WILLIAM L. SCOTT. Is it the intention of his amendment to eliminate section 6? I have not read his amendment that way. Is it during the period of the study section 6 would be suspended?

Mr. Moss. That is correct. Section 6 would not go into effect until after the study was completed. A decision is then made on what the effect of section 6 would be.

Mr. RANDOLPH. I am sorry, I do not believe the Senator from Utah means to say that.

Mr. Moss. I am talking about my amendment.

Mr. RANDOLPH. I doubt he is really explaining exactly what his amendment does in that regard. I want to be very careful.

Mr. WILLIAM L. SCOTT. While his amendment would suspend section 6, it would not do anything to change the decision of the courts in Sierra Club against Ruckelshaus under which the EPA is making regulations. My amendment to the amendment that the Senator intends to offer would also hold that decision in abeyance during the time the study is under way.

Mr. Moss. The amendment of the Senator goes a step beyond mine. My amendment does not have anything to do with the current law as it exists and as it has been interpreted by the court. So Sierra Club against Ruckelshaus is still the law. My amendment simply says that section 6 of the bill which is before us will not be enacted and that there will be a study made of the nondeterioration issue. At that time we can address that particular point.

The Senator would go even further than that, as I understand it, and say even the Ruckelshaus case is suspended, or the application of it.

Mr. WILLIAM L. SCOTT. I believe we are in agreement on this. Perhaps our discussion might be postponed, until the Senator offers his amendment and I offer my substitute.

Mr. RANDOLPH. Briefly, I think the reason for the offering of my amendment was not that I was trying to have a catchup amendment in any sense. I believe that the proposal I presented is the best way to make the study. Others may feel that the Senator from Utah (Mr. Moss) or the Senator from Virginia (Mr. William L. Scott) has a better methodology to do this.

I believe that amendment which is proposed by the Senator from Utah certainly does not affect the regulations that have been set forth by the Environmental Protection Agency on nondeterioration. I believe we have to think of the effect without a congressional statement of policy. That is what I am attempting to do here.

Mr. MUSKIE. The easiest course for the committee to follow would have been to let the matter proceed through the courts; to let each of these cases be dealt with individually by the courts, and let case history build up the public policy.

We were pressured by industrial sources and by environmental groups to do something about setting a policy for clean air areas that would balance the requirements for economic growth against the need for environmental protection.

We did not greedily assume the authority to write new law. It was a 9-month process of balancing out these conflicting interests and trying to arrive at a balance. Now it is said that we have reached too far, that we have demanded too much, that we were unreasonable, and that a separate policy from that of national primary and secondary standards is not needed.

What the Senator from West Virginia is advocating is to make clear what I think was clear anyway, that the learning process should be an ongoing one, and that it should be done through the structure of the commission which Senator Randolph and Senator Baker together proposed before the committee, and which we adopted.

Obviously its effect is not to bypass the Moss amendment.

Mr. RANDOLPH. That is right.

Mr. MUSKIE. We have agreed we would try to get to the Moss amendment tomorrow morning at 9 o'clock. This is not an attempt to bypass it or diminish the distinguished Senator's parliamentary prerogatives in that respect whatsoever.

It was simply for the purpose of rounding out what the committee had already done within the confines of the bill.

Mr. Moss. As I have indicated before, I certainly agree with the study feature. In fact, that is a part of my amendment, to mandate that the study go forward and give us the data.

That was the reason why I asked, "Do we suspend the new law in section 6 while the study goes forward?"

Of course, the Senator answered no, that it made no change in that.

That is the thrust of my amendment, that if we do not study it first, we get locked into the statute, and it may be extremely difficult to change or get out of the statute if the study shows some contrary or unacceptable results that would come from that policy of non-deterioration.

I agree with the Senator that the courts want Congress to speak, and if we say, "Yes, we are going to have this study and then we are going to speak," I think we have taken the initiative.

I would also like to say, I think most of that bill is excellent, and I think it is needed, I am not going to vote against the bill in toto. What I am concerned about is section 6, and that is what I want to zero in on, and see if I cannot persuade my colleagues that that should not be enacted until the study is made.

The reason why I feel I have to speak at this time on the Randolph amendment is that this sort of offers an out for some who would want to say, "Well, surely, I was for the study, without realizing they have not done the other thing which is to suspend the section until the study is completed.

Mr. MUSKIE. I am sure the Senator will make clear that they have not done that.

But with respect to the philosophical question the Senator has posed on nondegradation, if we had waited to write a regulation until all the uncertainties involved in this field of nondegradation were settled, we would not have written the 1967 law, and we would not have written the 1970 law. For example, when we wrote the automobile emission provisions of the 1970 act, it was said by the distinguished minority whip, the Sentaor from Michigan (Mr. Griffin) that we were asking the automobile industry to do something that we conceded they did not know how to do at that point. That was the absolute truth. At that point they did not know how to do what we were requiring them to do in the 1970 law.

If we had not imposed that requirement, would the automobile industry have done as much as it has done? And if it had not, then what condition would we face with respect to cleaning up auto emissions and auto pollutants? We would face an automobile population which has grown, an automobile population which would have contributed even more pollution to the environment.

We reached the conclusion that the only way we would resolve the uncertainty with respect to public health was, in 1970, to ask the automobile industry to do something that at that point they did not know how to do.

They did not do all we asked them to do in 1970, so we have given them some delays, and this bill gives them some more delays. But whatever we have achieved, we have achieved because we have insisted upon a public standard that would move them in the right direction.

With respect to nondegradation, if there is anyone in this body who believes that national primary and secondary standards were ever advanced as a complete protection for the public health, let him stand up and say so. They were never advocated as the complete definition of what the public health required.

If there is anyone in this body who believes that the national primary and secondary standards are a complete definition of what the public interest requires, given all the uncertainties that have been stated over and over again in testimony before the committee, and about which EPA has warned us, let him stand up and say so, and document it.

No such case can be made, that the national primary and secondary standards are a complete and secondary standards are a complete, final, and ultimate definition of what the protection of the public health and welfare requires. If there is anyone who can prove otherwise, then it is his duty and responsibility to say so, and to document it and prove it on the Senate floor.

The committee has not taken either position, and the two documents I put in the Record this morning, I think, are good explanations of the basis upon which the committee acted. We believe that the public interest requires some protection in addition to primary and secondary standards. We believe there is good reason for that conclusion, and we believe there is good documentation in the testimony before our committee to support that conclusion.

If you believe otherwise, if you are ready to discard all of the experts who point to the uncertainties and the need for further protection, particularly in clean air areas, then stand up and say so now.

The Senator from Utah says that if we put this policy in place and the studies indicate that the policy goes too far, that we cannot recoup the ground that we have lost—presumably ground that we have lost in terms of unrestrained economic growth.

Does anyone really believe that? Let me put it the other way: If we do not do something like this to protect cleaner air, and we put in place economic growth that runs counter to the public interest requirements of the country, then that cleanup becomes enormously expensive.

The Senators from Nevada are advocating an amendment to grandfather in one smelting plant. Why is that smelting plant a problem? Because it is in there, with jobs, hardware—a plant representing an enormous investment that cannot be retrofitted with pollution control equipment from any economic standpoint.

So now the advocates, or those who want to wait, are saying, "Let us not worry about what it costs to retrofit whatever we put in place, but we will all replenish our equipment between now and sometime in the future. Let us go ahead, and not worry about that."

All of our problems in the dirty air area of this country stem from the fact that we have not given a damn as we went along. We have put these facilities, communities, plants, and transportation modes into place without ever considering what they were doing to the air blankets that surround this globe. Now we are finding it almost a Herculean task to clean them up.

Those who oppose the nondegradation provisions of this bill are saying:

Let's do it the same way in the clean air areas of the country. Let's build new Augean stables in the clean air areas of the country and worry about cleaning them up only if some more studies tell us that in some way we did not mean what we did not intend. We violated the public interest that we were not able to perceive in the midsummer of 1976.

Now those are the choices. Obviously a policy we make is going to be in place until we change it. But which course creates the greatest potential for irrevocability? One choice imposes a very mild kind of restraint, as we will document when we get in to full discussion of the nondegradation issue, a very mild kind of restraint on economic growth in clean air areas. Or we can choose a policy which says:

Go into these areas, wherever you want to, build plants, invest hundreds of millions or even billions of dollars, and we will worry about whether or not you are defiling the atmosphere in unacceptable ways after we have studied it some more.

The committee has made its choice. It is a close issue in this Senate. In a time of recession and economic adversity all you have to do is put the label of jobs or energy on an environmental policy, and the votes flock to your banner.

The committee was as concerned with the economic arguments that are being raised, the uncertainties of the future, and the difficulty of fashioning a policy that works without stepping on anyone's toes, as any Member of the Senate.

I think the product that was finally produced, even though I did not approve every block that was put in it—I mean I did not vote for everything that went into this nondegradation policy—was the product of discussion and deliberation by nearly a unanimous attendance of committee members over a 9-month period. I felt it was about as representative a view of what the Senate, as a whole, would do if it were exposed to the same facts, arguments, and analyses, that could be devised.

And it was for that reason, and that reason only, that I agreed to floor manage this bill. There has not been an environmental bill out of the Committee on Public Works in 13 years that I came as close to opposing as this one. But I agreed to floor manage it because I had confidence in the good sense, intentions, motivations, and the capacity to make judgments of my colleagues on the committee. This is, after all, a representative body, and I do not know of any issue in all the years that I have worked on committees in the Senate which has been given more intelligent, comprehensive, and time-consuming attention by the members of a committee as this nondegradation policy.

Mr. MUSKIE. I did not intend to say that at this time, and I shall be happy to engage in full debate on nondegradation at this time, but because of some of the points that the Senator from Utah made, it seemed to me important to make some kind of response.

I do not know. I have been losing recently on the floor.

Mr. MOSS. As the Senator pointed out, the law is now in place anyway, and Sierra Club against Ruckelshaus is the law of the land now on degradation and much is in place. I believe the Senator knows we have to move ahead, but I am not one that likes to run and jump over the cliff and then look back up and say:

I really should not have jumped over that; I should have looked down first to see where those rocks were.

That is what I am trying to get through here.

I do not deny that the subcommittee held hearings on the Clean Air Act. But the official four-volume record of the subcommittee hearings does not support the allegation that the nondeterioration policy was

aired fully during these hearings. Those witnesses who did address the issue of nondeterioration did so only in the broadest philosophical terms and in complete ignorance of the specific proposal for amending that policy.

Mr. MUSKIE. If the Senator will look at the transcript of the committee markups. I think he will find a much more extensive discussion of nondegradation supplementing the hearings.

All of the markups were held in open session. We had 48 of them. All of those who are interested in the act, the environmentalists, the industrial groups, the Chamber of Commerce, were well represented. I cannot remember one of those sessions that was not fully represented in attendance. We sought additional information from EPA and, when we received it, we disclosed it in open session. So the learning process both for the committee and for those affected by the committee's conclusions, went on beyond the formal hearings. The transcript is there. There is a considerable amount of information. We produced several committee prints.

Before we recessed in August last year we deliberately approved a committee print on nondegradation which we ourselves had not yet finally digested so that it might be distributed broadly around the country for the purpose of indicating to interested groups the directions we were exploring for decisionmaking.

I have misgivings about doing that sort of thing again because industrial groups all over this country distorted what we had done, advertised the committee print as the final product of committee deliberation, distorted its implications and in every way possible built the propaganda barrage that has never ceased since, to try to undermine the committee work. As a matter of fact, analyses that I read today of what is in this bill for nondegradation are addressed to that committee print of last July which the committee itself rejected months ago. So I am not sure that kind of information and educational process necessarily serves the interest of those who become subsequent critics.

Mr. MOSS. Is it not a fact that several members of the subcommittee expressed serious reservations about the wisdom of adopting sweeping nondeterioration legislation without the benefits of hearings on its specific provisions in the markup sessions?

Mr. MUSKIE. There were so many disagreements voiced on various aspects of the bill during the 48 markup sessions over 9 months that I do not know that I can characterize any one of them in those terms. I disagreed with some propositions here. But we have to write a bill, and now we are being told by the administration that we ought to ditch all of the bill except that part of it dealing with auto emissions because of the time involved. We have certainly used the time. In a way that has been information and educational. We had a virtually unanimous vote from the committee to report this bill. Senator Hart dissented. But the remainder of the committee voted unanimously to report the bill in the form which is before the Senate.

Mr. BUCKLEY. I point out that what we have agreed upon represents, in substance, a codification of the regulations now in place.

Yes, there were questions about the effect of doing this. But we felt that we would be far better off, that the environment was better off, that business was better off, by stabilizing the ground rules, rather than relying on court decisions, with the delays that result from litiga-

tion, and on regulations, in the absence of specific congressional direction. The results of this Air Quality Commission study we have mandated will examine the kind of issues that are raised by the Senator from Utah, but they will not be solved or resolved by his amendment.

Mr. MUSKIE. I say, in all fairness to Senator Hart, who wanted me to do so, that he did not vote against the bill because it was too tough. He voted against it because it was too lenient, in his view, in some respects.

Second, his objections were not raised to this particular issue but another one. I want the record to reflect accurately his position.

Mr. RANDOLPH. I think this has been clarifying and helpful.

I do not anticipate that I will have the agreement of the Senator from Utah, but there is nothing in this amendment that does violence to the approach that he will take. He will bring up his amendment, and it will be discussed further. Members will make that decision. The same will be addressed by the Senator from Virginia (Mr. William L. Scott) in a different way.

Let us have those matters stand by themselves. If the Senator cannot support the amendment, I will understand. We have asked for the yeas and nays, and I hope we can have a vote on the amendment as I have presented it.

Mr. Moss. My position is that I think we are proceeding in the wrong sequence on the amendments we are talking about. The amendment of the Senator from Virginia is perhaps the most extreme, to use a designation; next, perhaps, is mine; and finally comes the amendment of the Senator from West Virginia.

The normal way to proceed is to decide whether we want to go the whole way and even suspend the Ruckelshaus law, or whether we want to go halfway and just take out section 6 until this study is made, or whether to leave section 6 in and go with the Senator from West Virginia and simply put the bill in place and then do the study.

What I am concerned about is that we are in the reverse order. Everybody probably should vote for the study. Hardly anybody could object to a study, if it is done with alacrity and efficiency. But having done that, they are less likely to consider suspending application of part of the bill until the study is over, and even less likely to suspend the law of Sierra Club against Ruckelshaus.

If I could get that worked out so that our voting could come in that kind of sequence, I would be perfectly happy to do it.

Mr. RANDOLPH. I will insist on having the yeas and nays on the amendment I have offered.

The PRESIDING OFFICER. The yeas and nays have been ordered.

#### AMENDMENT NO. 1599

Mr. Moss. I therefore offer my amendment as a substitute for the Randolph amendment, amendment No. 1599.

The amendment is as follows:

Section 37 is amended as follows:

"SEC. 37. Section 315(d) (redesignated as 315(f) by the foregoing amendment) is further amended by changing the reference to 'section (a) (3)' to 'section (a) (4)', by striking everything after 'March 1, 1977,' and by inserting in lieu thereof 'and the results of the investigation and study concerning section (a) (1) of this section no later than one year after the date of enactment of the Clean Air Act Amendments of 1976'."

As amended section 315(f) would provide as follows:

"(f) A report, together with any appropriate recommendations, shall be submitted to the Congress on the results of the investigation and study concerning section (a) (4) of this section no later than March 1, 1977, and the results of the investigation and study concerning section (a) (1) of this section no later than one year after the date of enactment of the Clean Air Act Amendments of 1976."

The PRESIDING OFFICER. The amendment is not drafted as a substitute and therefore is not in order.

Mr. Moss. Therefore, I will discuss the Randolph amendment for the next couple of hours.

I am at a loss to explain why some of my colleagues find my amendments to be so controversial. What do the amendments entail that is so hard to accept? Their basic thrust is very simple. They provide an opportunity to examine comprehensively and objectively, before we act, a major Federal policy which may or may not be necessary or desirable. Closing our eyes to the lack of hard information will not make the controversy go away. Enacting a rather arbitrary set of air quality standards for each section of the country without demonstrated health and welfare benefits, does not relieve us of our obligation to represent the total welfare of our cities and our economy. We cannot pursue a policy just because it is touted as an important environmental issue. More is required.

Proponents of the nondeterioration policy argue that the time for study is over and that the time for implementation has arrived. This argument might have merit if it were not for the fact that the results of studies thus far completed vary so significantly in their prescriptions for future action. Undoubtedly, this variance results from the piecemeal approach which has hallmarked past efforts. Not a single study completed to date has taken into account all the relevant factors—economic, social, environmental—that will provide the necessary information for a final decision on this important subject. Every Federal agency I have contacted, with the exception of EPA, has replied that more information must be made available before any meaningful decision can be made. The President has also expressed grave concern about the negative economic effects which the policy of nondeterioration could have. Even EPA has inadvertently supported my position by their recent suggestion that perhaps a class III with guaranteed potential for industrial expansion is necessary after all.

#### EXISTING UNKNOWNNS OF THE NONDETERIORATION POLICY

Even my opponents will admit that some issues relative to non-deterioration have received insufficient attention. My concern is that the list of these issues is so very long. The list of unknownns includes at least the following:

First. Where are the "clean air areas?"

Second. What are the "baseline" concentrations of pollutants in such areas?

Third. How many facilities can be sited in a given area taking into account other sources not requiring permits which will be attracted by the major industrial emitting facilities?

Fourth. What are the "air quality related values" mentioned in section 6 which the Federal land manager has an "affirmative responsibility to protect?"

Fifth. Where are the areas most likely to be designated as national parks and national wilderness areas in the future?

Six. What natural resources are located in areas which would be severely restricted from development because of their locations in, or proximity to, class I areas?

Seven. What will be the cost in terms of lost tax revenues, payroll, and jobs as a result of implementation of this policy for each State?

Eight. If development under this policy is virtually unlimited, as EPA suggests, why do we need to implement it at all?

Nine. What are the current population trends in the country; are more people moving toward the areas which would be most severely impacted?

Ten. If we are protecting more than aesthetic values by implementation of this policy, and in fact, we are protecting health and welfare, why have not the national ambient air standards been adjusted?

Eleven. If nondeterioration cannot be related to the protection of health and welfare, does Congress have jurisdiction to implement this policy at all?

#### THE STATE/FEDERAL PROBLEM REGARDING CLEAN AIR LEGISLATION

The supporters of nondeterioration give as one of the primary reasons for their support of the provisions in S. 3219 for a greater degree of discretionary decisionmaking by the States. They argue that the bill's rendering of the State's administrative role is more flexible than current EPA regulations, which incidentally would remain in effect if my amendments are adopted. I believe that these current regulations, imperfect though they may be, do provide for significantly greater industrial growth than the new provisions called for by S. 3219.

Comparing administrative regulations with specific statutes is like comparing apples to oranges. Administrative rules are always more flexible than statutes because of the comparative ease with which they can be changed. EPA regulations can be promulgated, modified or revoked without congressional action, assuming, of course, that they comport with legislative intent. However, once Congress has enacted the specifics of a nondeterioration policy, neither a State nor EPA has the authority to modify such specifics—for example, mandatory area classifications and incremental ceilings on pollutants. It can only be done by another act of Congress.

Much has been said about the authority of the Federal Government under the EPA regulations to classify virtually any lands as class I. However, only the State can initiate procedures to reclassify non-Federal lands as class I—or class III—and then only after a hearing procedure which takes into account, first, growth anticipated in the area; second, the social, environmental, and economic effects of redesignation; and third, any impacts of redesignation upon regional or national interests. If a Federal land manager proposes to reclassify Federal lands to a more restrictive classification, he must follow the same procedure.

Under the bill, States may reclassify lands as class I without following any specified procedures. This certainly gives the States flexibility, but only to implement a restrictive Federal policy without procedural protections for those adversely affected.

The ultimate flexibility under the EPA regulations is that they permit classification of areas as class III which would allow industrial development up to the national ambient standards. The bill only allows class I and class II designations, both of which permit much less development.

Under existing EPA regulations, the States may assume all of the responsibility for determining where a proposed facility may be sited; that is, placed. Hence, the Federal Government need not become involved except where the State proposes to reclassify an area. Under the bill, the Federal land manager has an "affirmative responsibility" to protect "the air quality related values"—whatever they are—of class I areas, and can, in effect, veto the granting of a permit for a facility which may be miles from a class I area, until the operator proves that there will be no adverse impact on these undefined values.

Mr. WILLIAM L. SCOTT. I want to lay the foundation for an amendment that I shall offer tomorrow or the next day, amendment No. 1617.

I ask that the following Senators be added as cosponsors of this amendment: Mr. Curtis, Mr. Fannin, Mr. Eastland, Mr. Helms, Mr. Thurmond, Mr. Goldwater, and Mr. Garn.

The Clean Air Act amendments that are now before us are a very comprehensive measure. The bill itself contains 91 pages. The Senate committee report contains 231 pages, and the subject matter is very complex, representing not only an extension of the 1970 act, but a number of revisions and extensions, expansions of Federal control over transportation, auto emission standards, and air quality generally.

I do not intend to discuss the bill generally, but to limit my remarks primarily to the nondegradation portion that is, for the most part, on pages 11 through 20 of the committee bill.

We should not take a myopic or tunnel vision of legislative proposals. In my opinion we have an obligation to consider the overall welfare of the country and its citizens. Will this bill add inflationary pressures to our economy? Will it require additional paperwork for both the Government and the businessman? Will it delay or prevent the construction of new plants, new industries, new jobs? Will it magnify our energy shortages or further restrict the use of coal, our most abundant fossil fuel? Will it handicap the Nation in expanding the economy and result in no growth or stagnation in many parts of the country? I know that the Senate Public Works Committee has worked long and hard to report out a bill and that the House Interstate and Foreign Commerce Committee spent a year considering a similar measure. But we should still consider whether passage of this bill in its present form is in the national interest.

The phrase "clean air" has a good ring to it. Everyone wants a clean and wholesome environment. Polluted air can have a detrimental effect upon our health and welfare. My concern is that we be reasonable in our approach to the problem.

I would like to share an editorial from the Richmond Times-Dispatch which was written several months ago when this bill was originally reported from the committee.

#### THE CLEAN AIR BILL

Seemingly acting on the assumption that man can live by clean air alone, the Senate Public Works Committee has reported a package of environmental proposals that could result in the economic paralysis of vast areas of this nation.

These measures could impede economic development almost everywhere and halt industrial growth altogether in some sections, inevitably increasing unemployment and eroding the standard of living of countless Americans. Moreover, the proposals would thrust the power and authority of the federal government into some areas of concern that historically have been the provinces of state and local governments—and should remain so.

Called the "Clean Air Amendments of 1976," the committee's recommendations constitute a frightening monument to the destructive capabilities of unbridled zealotry. The objective—to protect the public from polluted air—is noble but the suggested means of attaining it are fanatically extreme and dangerous. Consider these prominent features:

(1) There could be in the future "no significant deterioration" in the quality of the air of any region whose air is now *better* than the national standards maintained by the federal Environmental Protection Agency. Such clean air areas would be officially identified, and the federal government could restrict—or *prevent*—economic or industrial growth within them, no matter how essential growth might be to the area's economic health. Obviously this would constitute a usurpation of the land use control powers traditionally exercised by state and local governments.

(2) Since shopping centers, apartment buildings and office complexes tend to generate automobile traffic, which is a source of pollution, the federal government apparently could control the location and construction of such facilities. More federal land use regulation.

(3) National parks and wilderness areas would be protected from air pollution not only from sources within their boundaries but also from outside sources close enough to affect their air. This would permit the federal government to designate buffer zones in which economic and industrial development could be restricted or prohibited. Still *more* federal land use control.

(4) Localities would be required to develop transportation plans designed to curtail the use of the automobile. Communities that failed to develop plans satisfactory to the EPA might lose all federal aid funds for their pollution control programs, including that money used for the construction of sewage treatment plants.

There is more to the committee's horrendous clean air plan, but these illustrations will suffice to show how irrational and dangerous it is. Clean air is desirable, of course, but man does *not* live by clean air alone. He needs bread, shelter and transportation, which means there will be a continuing need for new industries, new power plants, new apartment buildings, new shopping and office complexes and automobiles. To make the development and regulation of such facilities contingent upon a central federal bureaucracy's concept of what constitutes acceptable air quality, regardless of peculiar local needs and desires, would be incredibly impractical as well as philosophically repugnant.

Virginia Sen. William L. Scott has vowed to take a "leading role" in fighting the amendments. Gov. Mills E. Godwin Jr., opposes them and says that Virginia may challenge their constitutionality if they become law. Other governors reportedly are also unhappy. The Senate, we hope, will heed these objections and reject the committee's proposals.

You will note, the editorial begins by indicating the committee apparently assumes that man can live by clean air alone but this proposal will paralyze vast areas of the Nation, that it could impede economic development almost everywhere and halt economic growth altogether in some sections, inevitably increasing unemployment and eroding our standard of living. Moreover, the editorial continues, the bill would thrust the power and authority of the Federal Government into areas that have been historically the province of State and local governments and should remain so.

The editorial suggests that the bill constitutes a frightening monument to the destructive capabilities of unbridled zealotry and that in its effort to protect the public, the committee bill is fanatically extreme and dangerous. As examples it cites the "no significant deterioration" portion for which I have an amendment to propose. It also refers to the Federal Government controlling the location and construction of

shopping centers, apartment buildings, and office complexes by its right to control automobile traffic; its right to control buffer zones near national parks and wilderness areas, and to require localities to develop transportation plans designed to curtail the use of automobiles.

The editor states that in addition to clean air man needs bread, shelter, and transportation—that there will be a continuing need for new industry, new powerplants, office complexes, shopping centers, apartment buildings, and automobiles.

Somewhere we have to stop this concept of Government regulations which could lead to the destruction of the American free enterprise system as we have known it over the years.

Many of the proposals that come before us are well intentioned. Who could be against clean air? That is what we breathe but we also wear clothes which have to be manufactured. We eat food that has to be grown and processed. We live in houses that must be constructed out of material manufactured by commercial enterprise and, yes, we drive automobiles that enable us to get to our place of employment, as well as to take us on vacations and to help us enjoy our leisure time.

Yesterday the Wall Street Journal had an interesting editorial entitled, "Senator Muskie's No-Growth Bill."

I ask that this editorial be printed in its entirety at this point in the Record.

[From the Wall Street Journal, July 26, 1976]

#### SENATOR MUSKIE'S NO-GROWTH BILL

Imagine that Congress passes a law, and an appropriate agency issues a regulation, that prohibits adult male Americans from weighing more than 200 lbs., on the grounds that excessive weight is both unhealthy and unattractive.

Then imagine the little people's lobby wins a federal court ruling that even skinny teenagers weighing 120 lbs. aren't allowed to add any significant weight, on the grounds that this is what Congress seemed to have intended when it passed the law.

Imagine further the outrage of those who think the court ruling to be nonsense—because it bears no relation to either health or attractiveness, and in error—because Congress didn't intend to starve skinny teenagers when it passed the legislation.

The original author of the legislation then steps forward and says "Yes, indeed, I did have in the back of my mind freezing all Americans at their present weight, except for a pound or two for special cases that will be considered by federal bureaucrats. And to clear up any doubt, we're going to write the federal court ruling into the law."

All of the above is a rough approximation of what has happened since the Clean Air Act was passed in 1970. The legislation established national air quality standards, formulated by the Environmental Protection Agency based on health and ambient findings. The federal courts ruled that "no significant deterioration" of air quality could be permitted, even in those areas well within the standards. And now Senator Muskie, author of the 1970 Act, spurred by the no-growth lobby, wants to write into the law what the federal courts have already said is in the law.

The Senate is scheduled to debate the issue this week, and if common sense is to prevail, the very least it will do is accept the approach of Senator Frank Moss of Utah, who wants to postpone for a year the engraving into stone of Mr. Muskie's "no significant deterioration" provision. Mr. Moss, whose state is the economic equipment of our skinny teenager, proposes that a special commission evaluate the economic impact of the Muskie approach during this waiting period.

What Congress should really do, though, is simply accept the amendment of Senator William Scott of Virginia, who would strike the "no significant deterioration" approach and return to the actual intent of the 1970 Act, which was to set national air quality standards that apply uniformly. President Ford more or less

has endorsed the Scott amendment "in view of the potentially disastrous effects on unemployment and on energy development . . . until sufficient information concerning final impact can be gathered."

There is no national air quality standard, after all, when Congress gives the EPA bureaucrats the power to decide what the standard should be in northeastern Utah and what it should be in southwestern Tennessee. There would be varying classes of land, a "pristine" class where no deterioration would be permitted and others where some incremental deterioration would be allowed to accommodate economic expansion. There also will be gray areas, the buffer zones around the pristine areas, the sizes of which haven't been determined. If the buffer strips turn out to be 50 or 100 miles wide, there would be only nooks and crannies left in the country for major economic expansion.

To the browbeaten American businessman and industrialist, criticized for not creating jobs fast enough because they're too much concerned with profit. Senator Muskie's bill is an unnecessary nontariff barrier to trade. It legislates confusion as the chief means of cleaning up the air.

Whatever happened to the original idea, setting a tough federal standard that would provide for the nation's health to a reasonable degree, leaving to the states the option of enacting tighter standards if their citizens so desire? No doubt it was too simple and straightforward an approach for Washington to adhere to. Not enough red tape. Not enough confusion. Not enough bureaucracy.

The way things are going on the Clean Air Act there will be plenty of all those things. And whatever happens to the air, the Muskie proposal can certainly bring about "a significant deterioration" in local economies. That too, over time, can bring about a situation that is "unhealthy and unattractive."

A few minutes ago, Mr. President, the distinguished Senator from Maine inserted in the Record some correspondence from Russell Train, the Administrator of the Environmental Protection Agency, and he indicated that this said the primary and secondard standards were not enough. Well, Mr. Train or the Environmental Protection Agency are the ones who set the standards under the broad guidelines that were set up by Congress, and Mr. Train can change them if he does not think they are strong enough.

I have before me an editorial of today's date in the Lynchburg, Va., The News, and it refers to this measure as being "a clear disaster."

#### A CLEAR DISASTER

The U.S. Senate is about ready to vote on several amendments to the Clean Air Act of 1970 which will give the Environmental Protection Agency the ultimate authority to determine whether Lynchburg—or any other locality in the country—can build any more shopping centers or industries. The amendments constitute a "no-growth" policy in that they will prohibit construction of any project which threatens to increase air pollution, period.

Senator William L. Scott of Virginia has taken a leading role in opposing the economically destructive consequences of the amendments by striking from them the requirements that "no significant deterioration" of air standards can be permitted. If this requirement stands, it is difficult to see how Lynchburg would be permitted to authorize any new industries, or businesses, or even expand significantly any existing ones. This is because, aside from whatever pollution the EPA considered the new projects to produce, they also attract large numbers of workers who use automobiles to travel to and from work—and automobiles are a leading cause of air pollution.

The 1970 Clean Air Act prohibited the construction of major industrial sources that might significantly pollute the air in so-called "nonattainment" areas—areas where the standards are already being violated. This includes most industrialized regions in the country. The amendments now before the Senate go further: they provide that there shall be "no significant deterioration" in the quality of air of any region whose air is better than the national standards set by the EPA. These clean air areas will be officially identified and the Federal Government given the authority to restrict economic or industrial growth within them.

The Hampton Roads Energy Company has been trying for two years now to construct a \$350 million oil refinery and marine terminal in Portsmouth. The

EPA has declared the refinery environmentally unacceptable because the photochemical oxidant (ozone) standards in Virginia are in violation of the national standards established by the 1970 Act. The EPA decision, in effect, constitutes a no-growth policy on the entire East coast because the coast constantly registers ozone concentration higher than the national standard.

The Hampton Roads company has spent two years and over \$6 million on the refinery plans. The EPA decision imperils 3,000 construction jobs, 500 permanent employees and 2,500 related jobs, not to mention the tax benefits to state and local governments. The decision also blocks the nation's attempts to provide more energy at a time when it is increasingly dependent upon foreign sources.

A no-growth policy is nonsense on its face because the population of the country continues to expand at an alarming rate. More people require more jobs, more housing, more of the necessities and luxuries of life. All of these require construction, manufacturing, transporting, retailing. We must improve the quality of the air we breathe, and we can while accommodating the millions of new Americans being added to the nation each year. We cannot accommodate them, however, by restricting industrial, manufacturing, and energy growth which their increasing numbers demand.

Senator Scott's attempt to delete the "no significant deterioration" provision has been endorsed by President Ford who has urged the Senate to "preclude application of all significant deterioration provisions until sufficient information concerning final impact can be gathered." Lined up against them, in support of the no-growth policy at a time when the nation is beginning to recover from the recession brought about by inflation caused by government spending and the Vietnam war, are the liberal Democrats who control the Senate. The odds are against the Senator and the President, but they haven't backed off, and Scott intends to press the issue to a vote—which would put the liberals on record in favor of no-growth if they prevail.

While the economic consequences would be disastrous, the political damage would be even more so. This is because the amendments will give the Federal Government ultimate control over all major construction in the country. Nothing could be built without Federal approval anywhere, any time, and the Feds would also be given final approval power over how anything could be built if it involves large numbers of people using automobiles. Moreover, localities will be required to develop transportation plans designed to curtail use of automobiles. If they fail to come up with plans satisfactory to the EPA, they may lose all Federal aid for their pollution control programs, including the construction of sewage treatment plants.

These "amendments" in effect constitute a Federal land use control act and control over the economic and industrial development of the nation. The "no significant deterioration" amendment may improve the quality of the air we breathe, but it surely will limit the amount of food we eat, the number of jobs available, the amount of housing that can be built. It will, by deciding what can be built and where, determine where we work and live, and how we travel. As such, it is one of the most destructive bills ever to come before the Congress—and the liberals think it is just great.

The way things are going on the Clean Air Act there will be plenty of all of these things, and whatever happens to the air, the Muskie proposal can certainly bring about a significant deterioration in local economies.

That, too, over time, can bring about a situation that is "unhealthy and unattractive."

I hope each of us will think carefully about the desirability of maintaining the health of our economy that must continue to grow and develop to remain prosperous, of an economy created by the initiative of free Americans attempting to provide for themselves and their families through their own efforts. I know that some may say that I am overly concerned about the nondegradation provision of this bill but, we have a valley in Virginia paralleling the Skyline Drive and the Blue Ridge Parkway adjacent to the Shenandoah National Park, George Washington National Forest, Jefferson National Forest, and smaller parks and forest land areas. These parkways, parks and forests

add materially to the enjoyment of life of not only Virginians but people from numerous parts of the country. I have enjoyed the opportunity offered to relax in these areas, as many of us have at one time or another, but we have gotten there in our automobiles and we have been able to afford to drive there because of business and industry. We want the parks and forests but we also want to retain a healthy economy and a high standard of living that will permit us to enjoy our leisure hours in facilities such as these.

The concern of the people in the valley is illustrated by an editorial in the July 20 edition of the Staunton Leader. I ask that this editorial be printed at this point in the Record.

#### RESTRICTS LAND USE

Large areas in the Shenandoah Valley are embraced in the National Parks and National Forests, as much as 32 per cent of the area of Augusta County. These federal lands are not taxable by the state or localities.

Should the Environmental Protection Agency have the power to control land use in areas adjacent to these federal lands? Use would be controlled to protect the "clean air area" from nonsignificant deterioration which might result from location of a plant or other emission facility in the vicinity.

This does not involve more serious air pollution, which might affect health. Nor does it involve welfare, rather loosely defined by the courts to include (but not limited to) effects on soil, water, crops, vegetation, wildlife, climate, economic values, and personal comfort and well-being.

These already are protected by primary and secondary standards of the Clean Air Act of 1970.

Under new proposals, land use around the forest and parks would be controlled to maintain them above the standards required to protect health and welfare in other parts of the state.

No one wants to be against clean air, but this is a federal intrusion into land use, formerly the province of the states. It is an unnecessary enlargement of federal power.

Restriction of land use near the "clean air areas" will impede economic development of whole areas of our state and nation. Surrounding these federal lands with buffer areas of low-tax land, restricted as to industrial development, will have an effect on the standard of living, and on the tax rates for remaining property.

Both houses of the Congress have reported amendments to the Clean Air Act of 1970. Action on the Senate version is expected by the end of July.

Virginia Senator William L. Scott has announced that he plans to offer an amendment to the Senate version during floor debate. His amendment would eliminate the "non-significant deterioration" policy just discussed unless there is compelling evidence that a stricter policy in certain areas would be in the national interest.

Gov. Mills E. Godwin Jr. also opposes an extension of federal controls in this area, and Virginia may challenge their constitutionality if they are enacted. He, and other governors, feel that they are an intrusion on powers reserved to the states under the Tenth Amendment.

The federal government already exerts control over our schools, businesses (particularly through OSHA and EEOC) and elections. Should states be required to give up control of land use also?

We hope that reason will prevail. The "non-significant deterioration" policy is not needed to protect health or welfare. It should be rejected.

We will note the concern of the editor because large areas of the Shenandoah Valley are embraced within national parks and national forests with as much as 32 percent of the area of Augusta County which surrounds the independent city of Staunton being in Federal ownership and not taxable by States or localities. He is concerned because land use around the Federal land would be controlled to maintain the pristine character of the land within the parks and forests and

might have the effect of preventing new industry on privately held land adjacent to the Federal land.

On page 3 of the committee report it appears that the function of the EPA is being downgraded, that enforcement is to be left to the States. Yet, as we read further, this is merely a velvet glove and iron fist approach, because on the same page it states:

The Administrator thus could go to court to stop a permit for activities which would exceed the increments of pollution or which otherwise did not comply with the requirements of this section, including use of best available control technology.

Further down on the same page it states:

The committee has also asserted a Federal interest in protecting air quality over certain areas of Federal ownership, by a separate test. The potential activity outside those Federal lands—such as national parks and wilderness areas and international parks—could be prohibited if it would impair the air quality values associated with those Federal lands.

I have some reservations about the validity of laws of this nature. It may well be there is a taking for which just compensation must be paid under the fifth amendment to the Constitution because it does seem to me we take a man's property when we can take away his right to use it.

The provisions of this bill could mean "no growth" in the valley of Virginia paralleling Federal property for several hundred miles. I suggest that each Senator check the possible adverse effect within his own State, as well as that on the Nation as a whole, with the knowledge that under the bill as reported, new industry cannot damage the pristine quality of the air of Federal parks and various other types of Federal property. A little research regarding Federal property in one's own State will indicate why a large number of the State Governors are concerned about this legislation. I ask to have printed in the Record at this point copies of an assortment of letters from Governors expressing their concern to various Members of Congress and business organizations.

There being no objection, the material was ordered to be printed in the Record, as follows:

STATE OF FLORIDA,  
February 11, 1976.

HON. JENNINGS RANDOLPH,  
*Chairman, Committee on Public Works, Washington, D.C.*

DEAR SENATOR RANDOLPH: The Senate and the House will consider legislation to change certain provisions of the federal Clean Air Act dealing with transportation controls and nondeterioration of air quality. I strongly urge you to carefully consider the consequences of adopting these provisions and empowering the federal Environmental Protection Agency (EPA) to preempt the states' prerogatives in these areas. It is our position that the states are more capable of evaluating—the economic and social implications of desired air quality within their boundaries than EPA.

EPA most certainly has the expertise to carry out these activities but my concern is that it will promulgate guidelines and regulations based on the average national air quality rather than standards for areas with relatively clean air.

One resource which is vital to Florida is the quality of air and the tourism which depends on it. Florida's air quality is for the most part better than secondary air quality standards. For this reason, our State should retain as much flexibility as possible in the regulation of air quality within its confines.

Florida has enacted a rule to prevent significant deterioration and the Florida Environmental Regulation Commission has resolved to continue the protection of areas with air quality better than the primary and secondary standards.

Florida also believes that transportation control plans, if necessary, must be developed and administered at the local level in order to be effective. State and

county governments should determine the necessity of a transportation control plan and the alternatives available to correct problem areas. These local governments are more capable of assessing their problems and devising solutions which would be more appropriate than federally dictated programs.

The proposed amendments, if enacted, would place too much land use planning authority under the administration of EPA. Although it is necessary for EPA to establish minimum requirements, basic controls for more stringent standards should be left with the states.

With kind regards,

Sincerely,

REUBIN O'D. ASKEW,  
*Governor.*

STATE OF SOUTH CAROLINA,  
*March 19, 1976.*

Mr. RICHARD L. LESHER,  
*President, Chamber of Commerce of the United States of America, Washington, D.C.*

DEAR MR. LESHER: Thank you for your letter of March 10, 1976, and your comments concerning the proposed amendments to the Clean Air Act.

We are asking the members of the South Carolina delegation in Washington to oppose the proposed amendments to the Clean Air Act of 1970.

With kind regards,

JAMES B. EDWARDS.

STATE OF NORTH CAROLINA,  
*March 31, 1976.*

Mr. RICHARD L. LESHER,  
*President, Chamber of Commerce of the United States of America, Washington, D.C.*

DEAR MR. LESHER: This letter will acknowledge and thank you for your letter of March 10 in which you expressed the concerns of the Chamber of Commerce on the impact of amendments to the Clean Air Act currently being considered in the Congress.

North Carolina is well aware of the provisions of both the House and Senate versions of amendments, and we have actively opposed and intend to continue to oppose the enactment of either of these amendments in the Law.

Your interest and concern in this matter is appreciated.

Sincerely,

JAMES E. HOLSHOUSER, Jr.

STATE OF ALABAMA,  
*February 12, 1976.*

Hon. W. JACK EDWARDS,  
*2439 Rayburn House Office Building,  
Washington, D.C.*

DEAR CONGRESSMAN EDWARDS: Congress is currently considering amendments to the Clean Air Act and there is one segment of this legislation that gives us particular concern—the definition of “non-degradation.” We need your help in this matter because the way non-degradation is defined can have a significant effect on growth plans and employment in our State.

Alabama Air Pollution Control Commission established air pollution control regulations committing the State of Alabama to attaining USEPA secondary air quality standards by May 31, 1975. Alabama has met this commitment. Some individual emission sources have been necessarily delayed in meeting requirements because of availability of technology and/or equipment. These individual sources have not delayed attaining the secondary air quality standards.

USEPA has proposed three classes of air quality control regions as follows:

1. No deterioration from current air quality;
2. Expansion of industry until the air quality reaches the secondary standards;
3. Expansion of industry with air quality loss than the secondary standards but above the primary standards.

Alabama is preparing regulations consistent with the USEPA proposal and will hold public hearings this spring.

Designation of air quality control regions is in the province of the several states. The Congress should allow the several states to develop air quality control

regions compatible with growth plans of each state and based on the opinions of the citizens of the state. I urge you to oppose any specific definition of non-degradation. Some of the proposals contained in Staff draft will concentrate development more heavily in already impacted areas and completely shut off further development in the relatively under-developed areas. The several states are in a better position than Congress to define areas needing specific controls.

Sincerely yours,

GEORGE C. WALLACE,  
*Governor.*

OFFICE OF THE GOVERNOR,  
*Phoenix, Ariz., February 19, 1976.*

HON. PAUL FANNIN,  
*1313 Senate Office Building,  
Washington, D.C.*

DEAR SENATOR FANNIN: I wish to call your attention to the impact which the proposed Clean Air Act Amendments of 1975 have upon the State of Arizona. Of major concern is the fact that adequate consideration has not been given to the effects of land ownership patterns and the potential diversities in land management philosophies in the implementation of the amendments. Federally controlled lands in Arizona account for 43.52 percent of the land area; and Indian reservations account for 26.73 percent. The distribution of these lands are such that only a small portion, if any of the non-federal, non-Indian lands of the state would not be influenced by decisions made by Federal Land Managers. Consequently, the economic development of this state could be unduly determined at the Federal level.

It is essential that State rights are preserved and that opportunities to participate in the decision making process are provided to local governments particularly when standards to protect human health and welfare are not exceeded.

I urge Congress to establish a study commission to investigate and analyze the implications and consequences of the non-deterioration provisions as promulgated and proposed and to consider the alternative approach outlined by my staff in the enclosed report.

Please feel free to contact me to discuss this matter of extreme concern to the State.

Sincerely,

RAUL H. CASTRO.

STATE OF MAINE,  
*February 25, 1976.*

J. NEAL MILLER, Jr.,  
*Director, Gulf Oil Corp.,  
Houston, Tex.*

DEAR MR. MILLER: Thank you for your recent correspondence. I appreciate your bringing to our attention amendments to the Clean Air Act presently pending before Congress.

Please know, I share your concern over the possibility of further encroachment by the Federal Government on the rights and destinies of Maine citizens and I concur with you that decisions affecting the local communities of Maine and other states should, whenever possible, be made at the local level.

The State of Maine through our State Legislature and our Department of Environmental Protection has enacted some of the most sound and comprehensive environmental laws and regulations to be found anywhere in the entire Nation. However, these laws and regulations are not so stringent as to preclude economic development.

The people of Maine are justifiably proud of their State and its environment, but they are also very concerned about the present economic picture in which there are not enough jobs for the people who want to work.

Economic growth should be orderly and with proper environmental impact assessment, but most certainly not zero-growth oriented.

Thank you for alerting us to this situation.

Very truly yours,

JAMES B. LONGLEY,  
*Governor.*

THE CAPITOL,  
Jackson, Miss., March 17, 1976.

Representative THAD COCHRAN,  
Cannon House Office Building,  
Washington, D.C.

DEAR THAD: On behalf of the people of Mississippi, I am quite concerned over the implication of pending amendments to the Clean Air Act both in the Senate and the House.

As I understand the situation, the proponents of both the Senate and House versions of pending amendments are seeking to write into law the provisions of a highly controversial Court decision several years ago (*Sierra Club vs. Ruckelshaus*) which the Supreme Court, as it was constituted at that time, affirmed by a 4-4 split decision.

The proponents seem to be anxious to get these provisions set in concrete in the law before the present court rules on this matter again.

I am sure you are aware that the small but highly vocal group of people pushing this concept will denounce any attempt to breathe reality into the Clean Air Act.

However, the best information available to me indicates that the Congress needs to reverse rather than to confirm many of the unreasonable interpretations that have been placed by the courts on the Clean Air Act, particularly *Sierra Club vs. Ruckelshaus*.

I am a firm advocate of the stated objectives of the Clean Air Act; that is, that the State takes action to protect the health and welfare of its citizens through the adoption and enforcement of the National Ambient Primary and Secondary Standards as determined by the Administration.

Court rulings and EPA regulations that go beyond the attainment of National Ambient Primary and Secondary Standards should be overturned.

If pending amendments to the Clean Air Act are passed, it will virtually halt economic development in our state.

I need not remind you that the Natchez Trace Parkway and other national monuments in Mississippi would require, under the pending amendments, the zoning of most of mid-Mississippi in "Class I", in which virtually no residential, commercial or industrial development could take place and where no new highways or other public works or recreational areas could be built.

The limitations that would be imposed by the pending amendments in the remaining area of Mississippi are so stringent that development would be severely impacted.

I urge you to help protect the well-being of Mississippians by opposing the adoption of these pending amendments.

Sincerely,

CLIFF FINCH,  
Governor.

FEBRUARY 18, 1976.

HARLEY STAGGERS,

Chairman, Interstate and Foreign Commerce Committee, House of Representatives, Washington, D.C.

I strongly urge that your committee defeat the Rogers Anti-Degradation amendment.

Resulting zero growth and adoption of a National Land Use law by this indirection would ruin the economy of small states such as New Hampshire as well as create an economic vacuum in enormous areas of the larger states.

The punitive results of this amendment will fall upon our most needy citizens first and most heavily.

Is there no end to these attempts by the Congress to hoist this country on its own petard?

MELDRIM THOMSON,  
Governor, State of New Hampshire.

STATE OF OKLAHOMA,  
March 19, 1976.

Mr. RICHARD LESHER,  
President, U.S. Chamber of Commerce,  
Washington, D.C.

DEAR MR. LESHES: Thank you for your letter concerning the Clean Air Act. I have already expressed my opposition to various Congressmen. I feel that environmental protection should be left at the state level, and I will continue to oppose federal regulation in this area.

Thank you again for your letter.

Sincerely yours,

DAVID L. BOREN.

OFFICE OF THE GOVERNOR,  
Austin, Tex.

Hon. BOB ECKHARDT,  
U.S. House of Representatives,  
Washington, D.C.

DEAR BOB: The amendments to the Federal Clean Air Act under consideration by the House Committee on Interstate and Foreign Commerce are of primary importance to Texas.

The State of Texas, of course, recognizes the need to protect the health and welfare of its citizens from the occurrence of known and anticipated effects of manmade air pollution and feels that aggressive efforts should be continued to achieve that goal. At the same time, we also recognize the need to achieve a full economic recovery and increased employment. We do not believe that the actions required to meet these needs are incompatible one with another.

Any proposed provision that would prohibit the construction of any major new facility in areas of the State which have not yet attained the national standards would not be in the best interest of Texas or the nation. Such a provision would severely disrupt the economic well-being of those areas and would impede our efforts to improve economic conditions. In addition, as we seek to protect and improve air quality, the State and its local governments should be provided adequate authority and flexibility to develop effective and workable air quality strategies designed specifically for Texas.

Proposals to prevent the deterioration of air quality in areas cleaner than the national standards should be founded on a requirement of best available control technology for any new source. Since 1971, the Texas Air Control Board has been implementing such an approach with impressive results by employing a stringent preconstruction review procedure. The requirement of best available control technology should, we believe, be included in any new legislation adopted by Congress.

Any proposals using increments and ceilings on pollution concentrations as part of a classification system should include adequate authority for the State to develop an implementation plan that will not unnecessarily constrain growth in cleaner areas.

Enclosed is a resolution adopted January 23, 1976, by the Interagency Council on Natural Resources and the Environment, and a position brief which provides supporting details. I urge your support for any provisions offered that will accomplish the principles stated in the resolution or those articulated above.

Sincerely,

DOLPH BRISCOE,  
Governor of Texas.

OFFICE OF THE GOVERNOR,  
Salt Lake City, Utah, March 11, 1976.

Hon. ALLAN T. HOWE,  
U.S. Congressman,  
Washington, D.C.

DEAR ALLAN: Last fall I expressed my concern to you over certain sections of the Clean Air Act Amendments of 1975 relating to the prevention of significant deterioration. The bill as it was then being marked up in the House Subcommittee on Health and the Environment was totally unacceptable insofar as Utah's

interests were concerned. However, I was encouraged, as I know you were, when I was informed that the full House Interstate and Foreign Commerce Committee planned modifications that would make the bill more acceptable to the states that wanted a balanced growth policy. I have just finished my review of the full committee version and my concerns have not lessened. I want you to be aware of my specific objections to the bill in its present form in the hope that they may become the basis of floor amendments that will be offered when the bill is reported out in two weeks.

Subsection (6) requires that each state establish within one year of the enactment of the Clean Air Act Amendments an implementation plan to classify areas where the national primary and secondary ambient air quality standards are not being exceeded. The state plan must be approved by the Administrator of the Environmental Protection Agency before the states can issue permits to any major stationary source which is defined in the bill as being "any stationary sources of air pollutants which directly emits, or has the design capacity to emit, one hundred tons a year or more of any air pollutant for which a national ambient air quality standard is promulgated under this Act." All of the coal-fired electrical generators now proposed for development in Utah emit more than one hundred tons a year of sulphur dioxide and particulate matter which are the only two pollutants controlled by national ambient air quality standards.

Although the House bill contains three classes for sulphur dioxide and particulate matter as compared with the two classes that are provided in the Senate bill, the House bill includes far more land in the more restrictive classes than the Senate bill. All national parks over 25,000 acres are included in the mandatory Class I areas as well as any unit of the national wilderness preservation system. We have no designated wilderness areas at the present time, but all of our national parks are in excess of 25,000 acres and therefore under Class I standards. In addition, the House version provides that any national monument, national primitive area, or national recreation area over 10,000 acres shall be initially designated Class I which may be later redesignated Class II if certain conditions are met. While this exempts all of our national monuments, the 1,061,738 acres in the Glen Canyon National Recreation Area, the BLM primitive areas in Grand Gulch and Dark Canyon and approximately 250,000 acres of foreign service primitive area in the high Uintahs are included in an original Class I designation. Furthermore, all national forest and wildlife refuges in the state are restricted to no less than a Class I or Class II designation. Because the classification of the land limits the use of the land, the significant deterioration section of the Clean Air Act Amendments has the same effect as a federal zoning law.

The close proximity of our energy resource lands to the national parks makes it almost certain that Class I air quality standards will be exceeded over some parks. The bill specifies that the Administrator of the Environmental Protection Agency shall not require any automatic or uniform buffer zones around Class I areas, but the Administrator is also empowered under the law to promulgate regulations establishing buffer zones that take into consideration terrain, meteorological conditions and the size of the emitting facility. Based upon diffusion formulas that have been run by the Utah Bureau of Environmental Health, the Kaiparowits power plant exceeds the Class I standards for sulphur dioxide at Bryce Canyon even assuming 90 percent sulphur removal at the proposed plant site using the best available control technology. Even with the best available control technology, I am informed that we fail Class II and Class III standards for sulphur dioxide with the Kaiparowits plant because of the requirement in the bill that it not exceed 25 percent or 50 percent, respectively, of the national ambient air standards.

While there is much to be regretted in the bill from a technical and practical standpoint, I find that the legislation is even more offensive administratively. The state is the ostensible administrator of the program, but in reality the states' role is purely ministerial. The air quality standards to be enforced are federally imposed, the land area to be included in each class are specified, and the limited discretion left to the state to redesignate can only occur after certain conditions are met. The EPA Administrator under paragraph (D) of Subsection (3) can disapprove any designation or redesignation when he finds that they do not meet the federal standards. The Administrator also promulgates the regulations by which the state reviews the application of an emitting facility for a permit, establishes the perimeter of the buffer zones around Class I areas, decides which air quality model will be used in order to determine if a state is in compliance, and in the absence of a state implementation plan, or in the face

of one that does not meet the federal standards, is ordered to promulgate a plan that does meet the requirements of the act.

This bill is an example of good intentions run riot and what results from the lack of a coherent national energy policy. In the interest of environmental protection it imposes a no-growth policy on Utah without any regard for the long-term national interest. At approximately the time this bill is being debated on the House floor, Secretary of the Interior Kleppe will announce his decision on the Kaiparowits Environmental Impact Statement. On June 8th, California will vote on Proposition 15 which proposes to prohibit the construction and operation of nuclear power plants in that state. If that proposition passes, as it likely will, and if Secretary Kleppe fails to approve the Kaiparowits project, or if this bill is adopted in its present form, how will the electrical power be generated to meet the needs of the American West?

I appreciate the support you have shown in the past on this overriding issue and hope that we can prevail with your colleagues in the House of Representatives.

Sincerely,

CALVIN L. RAMPTON,  
Governor.

OFFICE OF THE GOVERNOR,  
Lansing, Mich., April 29, 1976.

Mr. J. NEAL MILLER, Jr.,  
Director, Gulf Oil Corp., Houston, Tex.

DEAR MR. MILLER: In view of your recent letter to me regarding proposed Clean Air Act amendments now being considered by the Congress, I thought you might be interested in the enclosed statement which I recently made.

Thank you for bringing this matter to my attention.

Kind personal regards.

Sincerely,

WILLIAM G. MILLIKEN,  
Governor.

#### STATEMENT BY GOV. WILLIAM G. MILLIKEN

Gov. William G. Milliken urged Congress Friday to provide greater flexibility in air pollution control requirements for stationary sources under amendments now being proposed for the federal Clean Air Act.

Milliken said in letters to members of the Michigan Congressional delegation that:

"Of special concern to me is the fact that the current Clean Air Act has little flexibility for providing necessary time to control emissions from certain stationary services. Relief in this area is absolutely essential so that necessary abatement programs can be developed and carried out.

"Also of concern is the fact that the current Clean Air Act prohibits growth in areas where difficulty is being encountered achieving the federally mandated air quality standards. It would appear essential that some system be worked out whereby reasonable economic growth is not denied in an area that is making reasonable economic progress toward achievement of the standards."

Milliken said he was concerned that the amendments pending in Congress "could lead to federally mandated land-use programs based on air quality.

"I have consistently maintained that land-use planning should be performed at the local level, and the legislation I have supported in Lansing (HB 4234) requires that planning be done at the local level."

Milliken added that he believes "that it is inappropriate to base a land-use program on air quality. The quality of the earth—not the quality of the air—is the only appropriate and sound basis for land use decisions."

EXECUTIVE DEPARTMENT,  
Baton Rouge, La., April 20, 1976.

Hon. J. BENNETT JOHNSTON,  
245 Senate Office Building,  
Washington, D.C.

DEAR SENATOR JOHNSTON: Members of the Louisiana Air Control Commission have expressed their concern that proposed amendments to the Clean Air Act in regard to "Significant Deterioration" fail to protect the prerogatives of each

state to allow community growth and industrial expansion where desired for the economic and social welfare of the populace, and the Federal Ambient Air Standards are not exceeded. Language in either the Senate or House versions of the proposed bill is objectionable to the Commission because:

1. The EPA Administrator would obtain approval authority over a mandatory "Significant Deterioration" amendment of each State's Implementation Plan, and the Administrator may impose his own amendment in the absence of a submittal meeting his wishes.

2. The EPA Administrator would have the authority to require that each State's Implementation Plan include land use controls.

3. It establishes such small increments of growth allowable in relatively unpolluted areas so as to stifle further economic development and would preclude effective response to fuel conversions mandated by curtailed natural gas supplies, possibly leading to wholesale power failures in Louisiana.

4. It gives "Federal Land Managers" veto power over state permit procedures with no means for prompt relief from a Land Manager's arbitrary rulings included in the proposed amendments.

The Air Control Commission has requested that every effort be made to remove the offensive "Significant Deterioration" provisions from the bill since each State already has the right to choose small increments of deterioration in favor of economic and social gain for its populace and the proposed law effectively curtails that prerogative. New source performance standards require that each new emission source have effective emission control facilities and the Federal Ambient Air Standards limit the total extent of deterioration in every state; therefore, no such amendments are necessary.

I am very much concerned about the issues raised by the Commission and therefore urge your consideration of measures to remove the objectionable features from the proposed Clean Air Act amendments. Defeat of the entire bill may be in the best interest of the state if the offensive "Significant Deterioration" provisions cannot be satisfactorily resolved.

Your consideration of this request is very much appreciated.

Kindest regards and best wishes.

Cordially,

EDWIN EDWARDS.

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OFFICE OF THE GOVERNOR.  
Columbus, Ohio, March 12, 1976.

Mr. J. NEAL MILLER, Jr.,  
Director, Gulf Oil Corp., Governmental Relations Department, Houston, Tex.

DEAR MR. MILLER: Governor Rhodes received your letter requesting his assistance in opposing a nondegradation amendment to House Bill 10498.

The Governor has asked me to inform you that Mr. Ned Williams, Director of the Ohio Environmental Protection Agency, has strongly opposed the nondegradation aspects of the U.S. Environmental Protection program.

It is our opinion that such standards as are proposed by the subject amendment represent overreaching by EPA and would have a serious effect upon land use in our State.

The Governor appreciates receiving your comments regarding this very important matter.

Sincerely,

THOMAS J. MOYER.  
Executive Assistant to the Governor.

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OFFICE OF THE GOVERNOR.  
Richmond, Va., January 15, 1976.

Hon. EDMUND S. MUSKIE,  
Committee on Public Works, Russell Senate Office Building, Washington, D.C.

DEAR SENATOR MUSKIE: I am enclosing a staff report which outlines my reasons for opposing certain provisions of the Clean Air Act.

If this legislation is enacted in its present form, Virginia would feel impelled to ask the courts to set it aside as unconstitutional. Once the full impact for disruption of orderly comprehensive land use planning of these sweeping proposals is comprehended by other States, I believe a substantial number of them would join in that effort. The National Governor's Conference adopted a resolution in September, 1975, which recommended that each State retain the flexibility to determine for itself what is "significant deterioration" consistent with local val-

ues. The Southern Governor's Conference also in September, 1975, expressed serious concern that "significant deterioration" provisions might arbitrarily prohibit economic development of many areas, even though the air quality would be much better than the level required for good health. This Conference resolved that the States should be allowed to administer their air quality programs in whatever manner they choose to meet the national standards. The organization of State and Territorial Air Pollution Program Administrators also recommended, through a resolution, that the Clean Air Act be amended to expressly provide that there shall be no requirement to establish air quality standards more stringent than the primary and secondary standards.

I urge the members of the Senate Public Works Committee not to adopt the presently proposed nondeterioration provisions, but instead to support language which would affirm the right of the States to choose for themselves whether to adopt emission limitations which are more stringent than those necessary for the protection of ambient air quality standards. At the very least, the Committee should refer the nondeterioration provisions to a study commission for a thorough analysis of their implications, to be followed by public hearings where the full impact of any resulting recommendations may be focused on by State and local government representatives and concerned citizens.

Sincerely,

MILLS E. GODWIN, JR.

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STATEMENT BY GOV. MILLS E. GODWIN, JR.—CLEAN AIR ACT AMENDMENTS

Among the proposed amendments to the Clean Air Act, which are now being considered by the Senate Public Works Committee, are provisions which would require "nondeterioration plans" in all of the States. These plans would apply in all regions of a State which have air quality better than that reflected by the secondary ambient air quality standards for sulfur dioxide and particulate matter. Under the proposed, these regions would be classified as either "Class I" or "Class II" regions. No new major stationary source could be built in either of these regions unless the owner could prove in advance that he would *not* cause ambient concentrations for either sulfur dioxide or particulates to exceed the statutory increments. It is unclear whether these statutory requirements would limit or prevent construction of a new major stationary source outside a Class I or II region if it could cause these stationary increments to be exceeded in an adjoining Class I or II region. In addition, the State plan would also require all new major stationary sources in the nondeterioration regions, to utilize so-called Best Available Control Technology, which is to be determined on a case-by-case basis, without consideration of economic costs and social and environmental implications. Thus, this Best Available Control Technology would effectively replace the presently promulgated New Source Performance Standards (which take costs into accounts), and would also, in essence, establish, through a somewhat indefinite process, national emissions limitations for all major stationary sources located in the designated regions.

Under the present Clean Air Act, the States may choose to adopt emission limitations which are more stringent than the New Source Performance Standards, and may also adopt emission limitations applicable to new sources not covered by the NSPS, on any basis, as long as the primary and secondary standards, which protect the public health and welfare, are attained and maintained. In setting these emission limitations States may consider the implications which such limitations have for the environmental, economic, tax, and land use policies of State and local governments. The proposed amendment to the Act would preempt the States from making these considerations, and instead would impose nebulous federally mandated emission limitations in all nondeterioration regions. It may be difficult to assess, with existing evidence, what the full social costs will be as a result of these more stringent limitations. It is clear, however, that the economic costs will be relatively higher than they are now and thus will influence decisions for the siting of new facilities both within and outside of the nondeterioration regions. This, in turn, will seriously impact state and local land use planning.

It is important that State and local governments retain their current freedom to make land use and facility siting decisions on the broad basis of all considerations involved—not only clean air, but also clean water, historic and open space conservation, contiguous land uses, mineral utilization, employment, housing etc. As long as ambient air quality-standards are being maintained, any decision to

impose emission limitations which are more stringent than those necessary for the protection of the public health and welfare should remain with the State and local governments. Any statutory requirement beyond the primary and secondary standards would be purely and simply land use legislation.

If there is to be federal preemption of current state authority in the use of our land beyond the requirements to maintain primary and secondary air quality standards, then that would involve matters clearly beyond the scope of regulation of air emissions as such—the important but limited purpose of the Clean Air Act. These are areas more appropriately within the scope of other committees of the Congress, committees which already have comprehensive land planning legislation pending before them. But those committees to date have hesitated to recommend that Congress impose federal preemption on so vast and complex a subject, which is much more appropriately regulated by State, regional or local authorities. It is true that any restriction on proposed activities involves an incidental limitation on land use, but the vital distinction is the degree of the impingement. Here, the proposed restriction is more than incidental, it becomes virtually determinative of whether or not a plant may be built in a region, and if so, its size, its technology and its cost. These factors are at the heart rather than the periphery of land use planning decisions.

Finally, even if the Congress should be held to have constitutional power to push federal preemption beyond the barrier of the secondary standards in the Clean Air Act, the way in which the present proposals would do that is unconstitutional under the Tenth Amendment. Recent court decisions make it clear that when the Federal Government preempts, it cannot force the states to administer the federally dictated program. Accordingly, if Congress in fact intends to have the EPA Administrator take over land use planning throughout the United States, it must provide that he do so directly and not impose the administrative burden of carrying out his orders on state government.

I have read portions and have had printed in the Record those various letters to indicate there is wide opposition from people throughout the country to this measure.

Perhaps we should review the background of nondegradation. It is my understanding that the Administrator of the Environmental Protection Agency was of the opinion that he had no authority under the Clean Air Act of 1970 to promulgate any regulations requiring State implementing plans to provide against significant deterioration of existing clear air areas; that is, areas where the level of pollution was lower than the national standards established for health and welfare.

His refusal led to an action in the U.S. District Court for the District of Columbia against then Administrator Ruckelshaus by the Sierra Club to enjoin him from approving plans to allow clean air areas to be degraded so long as the plans were adequate to prevent ambient pollution levels from exceeding national standards. The court took the view that the language of the Clean Air Act included a congressional intent to prevent deterioration of air quality no matter how pure that quality might be in a given section of the country. The trial court's decision was approved by the circuit court without a written opinion and permitted to stand by a 4-to-4 decision of the Supreme Court in *Sierra Club v. Ruckelshaus*, 412 U.S. 541 (1973). The Court's decision is supported by the statement of purpose of the act which, among other things, indicates that it is "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population."

However, the court did not define the phrase "significant deterioration" and the business community is concerned that a factory cannot be built in an area where there is no manmade pollution of any kind if the construction and operation of the plant would result in pollution at any level, even though the air quality of the area would still be con-

siderably above the national ambient air standards. I cannot believe Congress intended a "no growth" policy nor do I believe laws should be made by courts or bureaucrats, nor is it commonsense to give legislative sanction to a no growth policy. My amendment would clarify present law. It would prevent the Federal Government from requiring air quality standards in any State or locality to be higher than the national standards for the protection of the health and welfare of citizens, while at the same time permitting States and localities to require a higher standard, if they considered it desirable, to meet a local situation. In other words, new businesses and industries could be permitted in localities with no major pollution problems provided the air quality remained above the national standards.

While we want to maintain air quality at levels better than necessary to protect human health and welfare, it would not generally appear desirable to go beyond that goal at the expense of jobs, development or dependence on other nations for basic materials. States and localities can develop their own land use programs. Under our system of dual sovereignty, States and localities are charged with the responsibility of planning and zoning. They should retain the right and responsibility to determine whether a given facility is a community asset and should be permitted to determine whether they desire air quality to be higher than that established at the national level. As our Nation continues to grow, we will need additional facilities to provide jobs and other basic necessities for an expanding population, and it seems unnecessary to have the development of a local area subject to the will of the Federal Government so long as air pollution is below the national standards.

A new plant in a given community may mean jobs and economic progress in lieu of economic stagnation. Man does not live by clean air alone. He needs bread, shelter and transportation. There is a continuing need for new industry, new powerplants, new apartment houses, and new shopping and office complexes.

On page 493 of the House report on this bill, a study by the Environmental Protection Agency, dated February 5, 1976, is cited, which concludes that a nondegradation policy together with new source standards of performance requirements would result in approximately \$28 billion in additional costs to the electric utility industry alone between now and 1990. This is the lowest estimate. According to the report, if a high growth rate during that period is assumed, the cost might well exceed \$50 billion. This is for electric power alone.

A healthy economy is an expanding economy. I believe the continued success of our free enterprise system is inconsistent with additional Government regulations. Is it not reasonable to believe that the quality of air high enough to protect the health and welfare of the citizens of one area is high enough to protect the health and welfare of the citizens of another area unless there is contrary evidence in a specific situation in a given locality? This can best be determined by the people who live in that locality rather than additional Federal requirements.

In a letter dated May 28 to the chairman of the full Senate Committee on Public Works (Mr. Randolph) the President indicated his concern about the significant deterioration problem. He states that the adoption of the committee bill in this regard would result in greater economic uncertainties concerning job creation and capital formation,

that the impact on future energy resource development might well be negative and that the uncertainties of the suggested legislation was disturbing. Let me review for you one paragraph of this letter.

In view of the potentially disastrous effects on unemployment and on energy development, I cannot endorse the changes recommended by the respective House and Senate committees. Accordingly, I believe the most appropriate course of action would be to amend the act to preclude application of all significant deterioration provisions until sufficient information concerning final impact can be gathered.

This is exactly what my amendment is intended to do. But let me reiterate that in the event the amendment is adopted, it would not in any way restrict the Environmental Protection Agency in maintaining both primary and secondary national air quality standards, the standards necessary to protect the public health and welfare.

The head of the Environmental Protection Agency can change and upgrade these requirements under present law. He is authorized to do that.

My amendment would permit the States and localities to adopt more stringent requirements as they can do under the present law. I believe it would help combine a wholesome and healthy environment with opportunity for the economy of our communities and our Nation to grow and prosper.

Mr. Moss. We want to show what can happen to our other means of livelihood by following a philosophical concept of pristine air. I have always felt that I could be classified with the environmental protection groups. My State has vast scenic beauty, and I have had the opportunity to help get in place three national parks there, which are superb and vast recreation areas, comparable to the areas the Senator from Virginia pointed out with reference to the great national park out here in the Blue Ridge Mountains above the Valley of Virginia. We have vast areas like that, and I would not degrade them for anything. As a matter of fact, they are economic assets, too, because many tourists come to see them.

But there are many other things you have to have in order to live, and just keeping all industry and growth out causes us to have our young people move away and our small towns stagnate, and ultimately we just come to a halt, unless we have some kind of opportunity to grow—for balanced growth, admittedly—keeping the air clean, keeping the water clean, and doing all we can in that way, but not just closing it down.

Mr. WILLIAM L. SCOTT. Would not the Senator agree that where there is private land adjacent to the public land, if a standard for lands nationally, which would include all of the land surrounding the federally held land, if the air quality standards as established nationally are high enough to protect the health and welfare of the citizens, then the air coming from that private land going onto the public land, that generally has not installation of any kind on it, could not pollute unduly the public land? Would the Senator care to comment on that?

Mr. Moss. As I have pointed out, under the EPA regulations now we have standards to protect the health and welfare of our people. If we are going beyond health and welfare, we are getting into an area of considerable question anyway as to what powers the Federal Government has; and certainly if the standards are being observed on the private lands, that same air, crossing over onto public lands, should

not be offensive; and yet it might be if we have a nondegradation standard which says you cannot change the quality of that air at all from what existed before.

So I agree with the Senator. I think that section 6 should be deleted until the study has been completed.

Section 6 provides for the mandatory classification of class I areas—national parks, wilderness areas, and so forth—whereas, EPA regulations initially classify all areas as class II, and permit reclassification of class I, but each reclassification would be considered on a case-by-case basis.

Mr. FANNIN. I am a cosponsor and supporter of the Moss amendments to require a comprehensive study of the "significant deterioration" issue before implementation of section 6.

The statement I will submit on that issue explains my reasons for that position and indicates the strong concern in my State of Arizona about cementing this concept into law.

At this time I would like to indicate my additional support for the approach of my distinguished friend from Virginia—that being to leave this decision on significant deterioration—or "nondegradation"—to the individual States. With the tremendous difference in the populations, industry and geographies of our 50 States, it would be most desirable to have each State make its own determination about maintaining air quality at higher than the primary and secondary standards.

It is certainly desirable in certain instances to maintain a very pure atmosphere—in the Grand Canyon National Park for instance—but I think the very stringent and intricate language of the committee bill would lead to very undesirable consequences.

Pollution from far distant forest fires and unpaved roads could easily be credited to industry which has already expended millions in emission control, thus precluding further development of rural areas which may be greatly in need of jobs through industrial growth.

I feel this is not the time to impatiently enact further Federal regulatory programs. The States have made great strides in achieving clean air goals and will continue to do so, unless a ground swell of local opposition to unreasonable Washington dictates prevents further progress. The Scott amendment would eliminate the Washington puppet approach and allow States to tailor their programs to meet their specific needs.

The Senate is considering amendments to the Clean Air Act, S. 3219. Included therein is a Federal zoning scheme for regions of the country where the air quality is presently cleaner than that required by national ambient standards. This scheme, contained in the section 6 significant deterioration requirements, designates certain Federal and surrounding areas into two categories:

Class I areas, where virtually all development would be prohibited through the enforcement of extremely low increments for particulate and sulfur oxide concentrations—which defy accurate measurement; and, class II areas, where only limited development could occur under increments prescribed in this legislation.

The nondeterioration requirements represent an effort to wring the last drop of reason out of some very twisted logic.

While poor air quality is by no means restricted to any special region of the country, national ambient standards are being exceeded in a

great many of the Nation's 247 air quality control regions. Specifically, the highest levels of particulates and sulfur oxides occur in the Northeastern and North Central States. Yet, section 6 would establish new or tertiary air quality standard for Western States, while others would be exempt, including those where national ambient standards are being exceeded.

#### THE CLEAN AIR ACT OF 1970

My colleagues will recall that the Clean Air Act of 1970 which became Public Law 91-604 December 31, 1970, required the Environmental Protection Agency to develop and adopt national primary ambient air quality standards to protect the public health with an adequate margin of safety. The act further required the development and adoption of national secondary ambient standards to protect the public welfare from any known or anticipated adverse effects. Such standards were proposed 27 days after the date of enactment, and promulgated in April of 1971.

The act also required the establishment of Federal emission limitations, that is, that amount or levels of control determined by the EPA to be necessary to meet the national ambient standards. In December of 1971, the EPA established the following emission limitations for particulate and sulfur dioxide concentrations:

Particulates	Existing sources (ambient)	New sources (emissions)
Annual.....	60 $\mu\text{g}/\text{m}^3$ <sup>a</sup>	0.1 lb/M <sup>2</sup> Btu. <sup>b</sup>
24-hr maximum.....	150 $\mu\text{g}/\text{m}^3$	20 percent opacity. <sup>c</sup>
Sulfur dioxide:		
Annual.....	80 $\mu\text{g}/\text{m}^3$	0.8 lb/M <sup>2</sup> Btu (oil).
24-hr maximum.....	365 $\mu\text{g}/\text{m}^3$	1.2 lb/M <sup>2</sup> Btu (coal).
3-hr maximum.....	1,300 $\mu\text{g}/\text{m}^3$	

<sup>a</sup> Micrograms per cubic meter.

<sup>b</sup> Pounds per million British thermal units.

<sup>c</sup> Visibility measurement.

In addition, the act required EPA to issue regulations by which States were to develop procedures to implement, maintain, and enforce the national standards. Collectively, these procedures are known as State implementation plans—SIP's. These plans, subject to EPA approval, prescribe timetables for meeting the national standards and Federal emission limitations. The SIP's further require compliance with Federal monitoring and reporting procedures. Such regulations were published in August of 1971, and States had had until January of 1972 to adopt and submit SIP's to EPA. Thus the EPA was empowered to control emissions from existing and new sources through the approval of SIP's.

#### THE GENESIS OF NONDETERIORATION

On May 24, 1972, 6 days before EPA had to approve or disapprove the SIP's, the Sierra Club petitioned the District Court for the District of Columbia for a temporary restraining order and preliminary injunction. The Sierra Club alleged that the action EPA was about to take would be illegal; that is, EPA approval of SIP's would not

prevent significant deterioration of air quality better than national standards.

On June 2, 1972, the district court issued the injunction, concluding in a brief written opinion, "the Clean Air Act of 1970 is based in important part on a policy of nondegradation of existing clean air." EPA was then required to disapprove those SIP's that did not prevent significant deterioration of air quality and to establish procedures to do so.

In November of 1972, the U.S. Court of Appeals affirmed the lower court ruling without written opinion, and EPA disapproved the SIP's insofar as they failed to prevent significant deterioration.

On June 11, 1973, the U.S. Supreme Court permitted the appellate court decision to stand by a vote of 4 to 4, again without written opinion.

#### EPA'S NONDEGRADATION REGULATIONS

In July of 1973, EPA proposed four alternative plans for preventing significant deterioration. Public hearings were subsequently held in Washington, D.C., Atlanta, Dallas, Denver, and San Francisco.

On August 27, 1974, EPA repropoed regulations for preventing significant deterioration which:

A. Created three classifications based on incremental increases for particulates and sulfur dioxide concentrations:

Class I—Areas where practically any air quality deterioration would be considered significant.

Class II—Areas where deterioration that would normally accompany-moderate growth would be considered significant.

Class III—Areas where deterioration would be permitted up to ambient secondary standards.

Under the EPA regulations all areas were initially designated class II. Redesignation could be proposed subject to public hearings and EPA approval by States, Federal land managers, or tribal governing bodies.

B. Established a preconstruction review process to insure compliance with the allowable incrementation increases;

C. Required the use of best available control technology; and

D. Provided procedures for public comment on each application to construct a new source and on delegating preconstruction—new source—review procedures to States and/or local governments.

On December 5, 1974, the EPA promulgated the regulations proposed on August 27, 1974. These regulations became effective January 6, 1975, and apply to sources commencing construction after June 1, 1975.

The regulations established the following numerical levels—in micrograms per cubic meter:

	Class I	Class II	Class III <sup>1</sup>
Particulates:			
Annual.....	5	10	60
24-hr maximum.....	10	30	150
Sulfur dioxide:			
Annual.....	2	15	80
24-hr maximum.....	5	100	365
3-hr maximum.....	25	700	1,300

<sup>1</sup> These values are the national ambient standards and, except for the annual standard, may not be exceeded more than once per year.

## EPA REGULATIONS CHALLENGED

These regulations are being challenged in the courts and in professional circles for being arbitrary and without foundation. Numerous petitions for review are pending before the U.S. Court of Appeals for the District of Columbia, which ask if EPA does in fact have the authority under the Clean Air Act to promulgate regulations for preventing significant deterioration of air already cleaner than the national primary and secondary ambient air quality standards?

Others charge that the EPA regulations are arbitrary and the increments are more stringent than necessary to protect the public health and welfare. And, that the concept of precise national increments prohibits States from determining their own regulations based on local needs and conditions.

Meanwhile, the Los Angeles Times reported on February 29, 1976, in an article entitled "EPA Study—The Finding Got Distorted," that an EPA scientist arbitrarily changed recommendations submitted by CHESS—Community Health and Environmental Surveillance System—following an expensive and comprehensive study.

Distortion of the CHESS recommendations ignited a mounting controversy over the need to spend billions in controlling sulfur pollution and more significantly, raised questions about the credibility of EPA research.

Scientists generally agree that sulfur pollution at higher levels is a health hazard, but severe criticism of the distorted EPA research has resulted in serious questions over just how low the harmful levels really are. EPA's CHESS reports were published in 1974. Surprisingly, more than a year has passed before the data distortions came to light.

The questionable scientist rewrote the work of CHESS scientists, often deleting important qualifiers on results involving sulfur-bearing fuels; deleted material that did not show a connection between sulfur pollution and adverse health effects; screened statistical analysis to down-play evidence that weakened the case against sulfur pollution; and overrode agency scientists objections to publishing estimates of the health impact of pollution that were either dubious or unsupportable.

In keeping with our reasons to suspect EPA's seemingly arbitrary rules and regulations, the Clean Air Act currently before the Senate goes far beyond the existing significant deterioration regulations of the agency, and even further beyond the Federal Energy Administration position of eliminating significant deterioration as a regulatory strategy altogether.

## CLEAN AIR AMENDMENTS OF 1976

Now the Senate is about to codify into law, this dubious bill of goods known as the significant deterioration requirements. Beneath the fanfare and flimflam about protecting air quality in the west reside a number of critical issues.

Section 6(g)(1)(A) requires each State to adopt and enforce as part of its SIP, a land use planning program by which certain Federal and adjacent lands are to be designated into two categories:

Class I, to include all international parks, and each national park, national wilderness area and national memorial in excess of 5,000

acres, and such other areas as the State, adjacent States, or Federal Land Manager may designate.

In these class I areas no new major facility may be constructed or operated that emits particulate or sulfur dioxide concentrations in excess of certain numerical increments.

This provision presents at least five problems which escape reason or solution.

First, the class I designation impacts most in those Western States with a high percentage of public lands—States which incidentally already enjoy air quality better than that prescribed by the national primary and secondary air ambient standards established under the Clean Air Act. In Arizona, for example, some 44 percent of the State is federally controlled and could very well be designated class I, Indian lands account for 27 percent of the State and could also be declared class I areas.

Second, to insure that the proposed increments are not violated by the plume drift from a facility located beyond the boundaries of a class I area, any new major facility constructed or operated in adjacent areas of up to 100 miles distant may be precluded. Because of the checkerboard pattern of landownership in Arizona, future economic development would be precluded in all but three small areas of the State—areas which, because of topographical, geological, and other physical conditions, are not conducive to development.

Third, the nondeterioration requirements single out but two potential pollutants—particulates and sulfur oxides. Though EPA is required to eventually recommend increments for hydrocarbons, and nitrous oxides, this bill fails to take into account the adverse effects, if any, of such other elements as carbon dioxide and photochemical oxidants, any of which separately or collectively, may very well eventually be found to be primary pollutants in need of control.

Fourth, the projected increments upon which the class I designation is constructed are at levels well below those that can be measured, even using EPA's measurement methods.

Because particulates are measured with a "high volume sampler" which, like a vacuum cleaner, draws air through a filter or collector, their accuracy may be off by as much as 50 percent under some conditions. And, since particles are generally of surface material blown into the air by the wind, two-thirds of the particles in Arizona are from natural sources such as dirt, forest fires, and pollen. Moreover, seasonal variations in particulate concentrations from natural causes will exceed the increments allowed.

The lower limit for detecting sulfur oxides, using the EPA method, is 25 micrograms per cubic meter. Yet, the annual mean proposed in section 21 for delineating a class I area is 15. Why the burning of sulfur in material used to fuel a barbeque or fireplace could easily exceed this increment.

Finally, what is the basis in law or in fact for establishing new and arbitrary numerical increments, particularly when EPA has stated publicly that "there are no quantitative data to support the choice of any specific increment below the national standards?" The significance of this question is demonstrated by the fact that the national standards are in micrograms per cubic meter:

Pollutant	National standards	Proposed class I	Proposed class II
Particulates:			
Annual.....	60	5	10
24-hr maximum.....	150	10	30
Sulfur dioxide:			
Annual.....	80	2	15
24-hr maximum.....	365	5	100
3-hr maximum.....	1,300	25	700

Section 6(g)(1)(B) provides that all remaining areas not designated class I, shall be designated class II areas.

Here again, the excessive demands made upon Western States amount to Federal management of State, local, and private property. For example, this provision could affect virtually every manufacturing plant, or chemical processing or mining facility, every conventional generating station and anything else the EPA Administrator "determines to be significant potential sources of air pollutants".

This requirement gives the EPA power over virtually every new major construction activity. But there is no provision, for any facility that is not stationary. So cars, trucks, buses, and trains would all be exempt. And yet, responsible testing results show that the internal combustion engine is the leading source of air pollutants in the United States, particularly in areas where the air is the cleanest. This single, major source of air pollution is completely ignored in every aspect of the nondegradation requirements.

Section 6(g)(2) compounds the land use issue even more. It requires, prior to the construction of any facility in class II areas, the "analysis of the ambient air quality, climate and meteorology, soils and vegetation and visibility" both at the site of the proposed facility and in the area "potentially affected by the emissions from the proposed facility for each pollutant which will be emitted". This applies to both construction and operation of the facility. And, this exhaustive data must be included in every permit application.

But is there a real need to analyze soil, vegetation and visibility as long as they represent no known adverse effects on health or any known or anticipated negative effects on welfare?

In the desert Southwest, an analysis of visibility can tell you when the wind is blowing hard enough to kick up the dust. That alone can easily exceed the proposed increments for particulate matter. Under section 6, controlling the dust could be demanded.

Why was this provision proposed? As noted previously, the prescribed increments cannot be measured, even by EPA reference methods. Anyone familiar with the Southwest will agree that the variations in climate, topography, and vegetation will be so great that corresponding changes in air quality simply cannot be correlated.

#### BEST AVAILABLE CONTROL TECHNOLOGY

Section 6(g)(4)(B) requires, among other things, that no major emitting facility may be constructed unless subject to best available control technology—BACT.

Heretofore BACT has been applied as a standard for technological equipment and not as a constraint on the sulfur content of fuel used to produce electricity. Now, as proposed in section 6(g) BACT would

mean "an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation—which the permitting authority, on a case-by-case base, taking into account energy, environmental, and economic impacts and other costs, determines is achievable.

This test for BACT is not a requirement for a true cost-benefit evaluation. Absent such a test, what assurance is there that these factors will be given meaningful, or for that matter any review?

Finally, while some state-of-the-art equipment is available, requiring its use on new facilities could make the facilities so expensive that they would not be built, even if the prescribed increments could be measured and met, and the new layers of government review and procedures could be penetrated. Combining these demands for exotic equipment with the intensive capital requirements of electric power companies, could easily mean the end of almost every planned conventional power generating station.

#### LOW SULFUR COAL

Since passage of the Clean Air Act, much has been learned about the sulfur found in coal that was not clear in 1970. This new understanding of the facts must be considered.

Specifically, in 1970 many references were made to "low-sulfur coal" or "high sulfur coal". At that time, a coal source was identified by the average sulfur found after sampling an entire field. If the average value was below about 1 percent, it was called "low-sulfur".

Calculations using this average value indicated that many such low-sulfur coal fields existed, especially in the Western United States, use of this coal would allow the new source performance standards—NSPS—to be met without additional desulfurizing requirements. And, it was deduced that a large amount of naturally acceptable coal was available to meet the NSPS.

But as these fuels have been evaluated for use in new generating stations, the natural variations in sulfur throughout a field makes it difficult, if not impossible for the operator to guarantee NSPS requirements will be met all the time, even when they can guarantee to meet those requirements on the average, and indeed, for every large fractions of the lifetime of the plant.

Those responsible for interpreting the law as written are forced to conclude that if, using the natural coal, NSPS requirements may be violated over some period of time no matter how small, flue-gas scrubbing devices are required. In point, is the fact that studies reviewed and accepted by the EPA on an operating plant have shown that infrequent exceedance of certain emission limitation values produce no threat to the ambient air quality standards. Furthermore, the situation results in requirements for heavy capital expenditures for cases that were not anticipated in 1970, and which are not necessary to meet ambient standards for clean air.

Accordingly, a definition of low-sulfur coal should be developed to permit deviations from the average, and to incorporate a procedure for defining and identifying "low-sulfur coal sources." Techniques exist for doing this in a manner in keeping with all of the aims and goals of the act. Subsequent to identification, the use of such sources would qualify an operator as meeting any "low-sulfur coal provisions" of NSPS requirements.

## CONCLUSION

The Clean Air Act of 1970 is complex and demanding enough. But when the usurpation of State prerogatives is endorsed by the courts, and then amendments requiring nonexistent technologies and endless proceedings are added, a maze is created into which only the foolhardy attempt to enter and from which only the exhausted, depleted, and defeated emerge. The way out of this maze is to scrap section 6 in its entirety.

Support for this recommendation increases steadily. The Governor of Arizona, the Honorable Raul H. Castro, joins other State and Federal officials in requesting that a study Commission be established to investigate and analyze the far-reaching consequences and the dangerous implications of the proposed nondeterioration requirements.

This Commission could be similar to the one established by section 315 of the Federal Water Pollution Control Act. It was directed to make a full and complete investigation and study of the economic, environmental, social and technological aspects of specific legislative intent.

The Central Arizona Labor Council, an affiliate of the AFL-CIO, has informed me that at a time when unemployment in the building and construction trades is approaching 30 percent in Arizona, that the proposed nondeterioration requirements make about as much sense as filling a fire extinguished with gasoline.

The council notes that if the nondeterioration requirements become law, some of the four coal-fired electrical generating stations planned in Arizona could not be built. And, those plants that survive the extensive Federal and federally mandated State approval processes, will be required to meet emission limitations far more stringent than the new source performance standards established under the Clean Air Act in its present form.

More important however, is the fact that if the proposed nondeterioration requirements become law, Arizona's utilities will either have to build smaller powerplants creating fewer jobs and forfeiting known economies of scale, or relocate to sites out of State.

In addition, groups that cut across all levels of Arizona—newspapers, concerned citizens, and business associations are demanding the Federal Government stop adding more and more controls, expenses, and intrusions into their lives.

Yet the demand for new air quality controls is by a few vocal litigants. No substantive need for this concept has ever been established.

The nondegradation requirements are a farce.

Mr. MUSKIE. My intervention at this point is triggered by two observations which the distinguished Senator from Utah and the distinguished Senator from Virginia appear to share: One is that this bill with respect to nondegradation is related to someone's philosophical notion of what pristine air ought to be.

I have already put in the Record a memorandum from the subcommittee staff to the members of the Environmental Pollution Subcommittee dated June 26, 1975, which suggests that our approach is almost the direct opposite of that. For example, under the subject of the concept of class II, let me read the following:

EPA defined the Class II area specifically to allow development of "average sized" facilities within the Class II region. Class II was not developed by re-

lating it to any specific ambient air quality, such as visibility. Class II does not establish a new kind of national ambient air quality standard, but instead states how much additional pollution could be added to any area which presently has air cleaner than national ambient air quality standards. Areas designated as Class II, whether moderately clean or extremely clean, would be allowed to add the exact same increment of pollution to whatever existing background levels are present.

Surely that is no definition of someone's philosophical view of what the pristine quality of the air ought to be in the clean air areas of the country.

Continuing the quotation :

EPA examined the average plant being constructed in the industrial categories most likely to have pollution problems and then projected the probable air quality impact of construction of such sources using the best available control technology. The Agency concluded that "... typical coal gasification plants, oil shale processing facilities, and petroleum refineries would not be expected individually to exceed the Class II increments in most areas. However, the Class II increments would prevent the aggregation of such sources within the close proximity of each other."

Surely a policy which permits the construction of coal gasification plants, oil shale processing facilities, and petroleum refineries can hardly be defined as a policy insisting upon pristine air purity.

Returning to the memorandum :

The same statement holds true for the average sized plants in the following categories: fossil fuel fired steam electric power units, municipal incinerators, kraft pulp mills, iron and steel mills, coal cleaning plants, sulfur recovery plants, lime plants, Portland Cement plants, phosphate rock processing plants, petroleum refineries, by product coke oven batteries, sulfuric acid plants, carbon black plants, primary aluminum plants, primary zinc smelters, primary copper smelters, fuel conversion plants and primary lead smelters. For many of these sources, the average sized plant would be *substantially* lower than the increment allowed.

That is hardly a definition of a policy that insists upon pristine air purity.

Returning to the memorandum :

The size of the facility or the number of identical facilities located within a Class II area is limited only by the existing technology for controlling emissions.

That pinpoints a requirement of the committee bill that new plants shall be required to use the best available technology that is available to them for the purpose of controlling their emissions. The Moss amendment would eliminate that requirement, at the same time that he urges that we buy some time with his amendment for the purpose of developing technology. If we are not prepared to use the technology that is now available, what assurance can we have that any new technology will be developed let alone that it will be used, or that public policy then can be converted to mandate its use when the Moss study is completed?

Returning to the memorandum :

As that technology increases in sophistication, larger facilities and facilities spaced in closer proximity would be allowed within the Class II increment.

I put the rest of that memorandum in the Record this morning. I emphasize the first page in order to respond to the impression that is being left in the debate this morning that the nondegradation provisions of the bill are designed to prevent economic growth. From that portion of the memorandum, which is the philosophical base of the committee bill, it is clear that the description is a distortion.

The second point that is being raised is that there are no values beyond primary and secondary standards that it is in the public interest to protect.

Let us look at the question of visibility. I know there is a tendency in some portions of the East where visibility has long since disappeared as an esthetic value of any consequence to sneer at visibility as a public interest value that ought to be protected. But I should think that, if I were a Senator from a State like Utah, New Mexico, or some other States out there where visibility not only is an esthetic value, but is an economic value when it is translated to the numbers of people who move to that area or travel through that area for the purpose of enjoying its beauty, I would wish to protect that visibility.

Let us look at visibility.

If the existing particulate background is 10 micrograms per cubic meter, the existing visibility is 120 kilometers, call it 120 miles. We can enjoy that kind of visibility in most parts of New Mexico. Having the Senator from New Mexico on the committee we focused on that. But with respect to class I, under the Senate bill, the national parks, like the Glacier National Park out in the Senator's area and some others, that 120-mile visibility would be reduced to 80 miles.

With respect to class II areas, the increments which the Senator's amendment is directed against, visibility would be reduced to 60 miles, and with respect to the House bill, which some people hold up as the standard, it would be reduced to 25 miles.

I have traveled through some of those great natural parks out there and, as I recall them, protecting their scenic values, protecting visibility, is critical to the protection of the area. I mean, if we want to eliminate natural parks, fine. But if we are going to permit their air quality to deteriorate to the standard advocated by the Senator from Utah, a standard which is the minimum value to which we seek to raise New York City and Los Angeles and Boston, then we are talking about visibility of 12 miles. I would not visit Glacier Park and spend a half day there if the visibility in that park were permitted to be reduced to 12 miles.

There is the question of acid rain. Acid rain is one of the great looming pollution problems of this country, and we have nothing in public policy at this point to protect us against acid rain. There is nothing in primary or secondary standards to protect us against acid rain. And it is clear that some of the devices and some of the technology that is being advocated by critics of this bill to lower the economic costs of dealing with pollution would exacerbate acid rain levels, and what acid rain does to the clean air areas of this country. Acid rain is transported from public utility crowded cities, and industry crowded cities—the areas that are dirty—to the areas that are clean. There is nothing in this bill that protects against that unless it is the margin of safety built into the class II increment. If we were to substitute for the class II increment the national primary and secondary standard there would be nothing in this bill to protect against the risk of acid rain and what it would do to the rural areas of the country, including my own State of Maine, and I assume some of the sparsely settled areas of the West.

At this point, I shall put to the Senate some questions that I hope every Senator would consider as he considers the issue raised by this nondegradation issue.

One, should Congress address the issue of protection of air quality in clean air areas—is that any of our business—either by voiding EPA's regulations, substituting congressional policy for protection for clean air areas, or striking the Clean Air Act requirement that air quality be protected and enhanced?

If we really want to buy time, if we really are uncertain about whether or not we need to protect clean air areas beyond the primary and secondary standards, why do we not simply amend the Clean Air Act, by striking out all provisions for protecting the clean air areas of the country? That is the first question.

And I gather, if I understand correctly, the Scott amendment would do that. Why not just strike it out? Let us wait until the clean air areas are filthy; let us wait until they need the application of national primary, and secondary standards before we worry about them. Why should we worry about them in advance? Let us strike all provisions and make the Clean Air Act really comfortable and just deal with the dirty air areas of the country.

Second, if the decision is that we should write congressional policy, what should be the basis for that policy? The same policy as for dirty air areas, that is, allow pollution up to secondary standards, or an added level of air quality protection designed to maximize options in clean air areas and to protect values that are not protected by primary and secondary standards.

Third, if we are to have a congressionally set policy—should one facility be permitted to use all the available capacity between background air quality and secondary standards, or should that capacity be divided among polluters? Should the maintenance of the secondary standard be an enforceable requirement? Should this require retrofit of new facilities prior to continuous operation if the plant causes or contributes to secondary standards being exceeded? What level of control should a new facility be required to achieve, or are we going to allow new facilities to proliferate without limit, without regulation, without standard, until the study is completed and Congress is able to develop a new policy based upon this study?

Four, if one facility, as is the case in many parts of the country, can utilize the entire remaining air resource, should the statute include a prohibition on any further development which might add to existing particulate and sulfur dioxide levels? If the committee decides that growth and air quality require protection beyond the level provided by secondary standards, what should be required? Should there be a margin of safety between background air quality and secondary standards to: first, permit reasonable growth of satellite development associated with large industrial facilities; and, second, future demands for new and expanded plant capacity?

Those two areas, it seems to me, are emerging from this debate: the question of; first, whether or not the committee bill does indeed require the maintenance of pristine air quality in the clean air areas of the country; and second, whether or not the public interest requires protection of clean air beyond national primary and secondary standards. Those are two legitimate issues, and I hope the Senate will focus on them as the debate progresses.

Mr. Moss. I am happy to have the Senator from Maine express his view on the bill that is before us, and I find that I agree very much with what he has to say.

I certainly do not want to be one who advocates dirty air or who is opposed to making all progress possible as rapidly as possible for improvement in cleaning the air.

I am sure that with the impetus there has been behind the Clean Air Act and its enforcement, the air quality in this country has improved immensely in the last 4 to 5 years, and I hope it will continue to do so.

However, my concern is with forcing a situation that goes too rapidly and where we do not have in hand all the facts. I am convinced, as I am sure every person in this body must be, that if you put into statutory language and make it law that certain things must be done and then find out that the standards have gone too far or they did not take into account certain conditions, then you have a very difficult situation with respect to changing it and getting out of there.

Mr. MUSKIE. Will the Senator yield for a moment?

Mr. MOSS. I have seen that chart, and I was in effect referring to that.

Mr. MUSKIE. Let me explain what it is.

This chart is written on a 1975 base that tells us where we are. It deals with two pollutants, one of which is sulfur oxide, which is one of the two pollutants covered by the nondegradation provisions. They are sulfur oxides and particulates.

At the present time, we are emitting 34.3 million tons of sulfur oxide into the air of this country. If we were to project high growth at 6.1 percent and apply nothing more than the inadequate new source performance standards to new plants and equipment, which are below the requirements of nondegradation, by 1990 we would add 7 million tons of sulfur oxides per year to the atmosphere, on top of the 34.3 million emitted in 1975.

If we were to project a moderate 4.8 percent annual growth, we would add 5 million tons more in sulfur oxides by 1990 than we do now, using new source performance standards.

If we are to use best available control technology, as the committee nondegradation provisions require, and project the same high 6.1 percent annual growth, by 1990 we would add 3.8 million tons per year of sulfur oxides to the atmosphere. We would add that much, using stringent enforcement of what the Senate bill requires. In other words, this is not rolling back pollution. This is rolling back the increase in pollution.

If we were to project moderate 4.8 percent annual growth—and we would hope to do better if we are dealing with the requirements of this country, and rigidly enforce the provisions of the committee's bill—we would still add, by 1990, 2.8 million tons of sulfur oxides per year.

With respect to nitrogen oxides, which is not related to nondegradation—but inasmuch as I have the chart out, I might as well complete the description of it—this also is a 1975 base. At the present time, we are emitting 24 million tons of nitrogen oxides into the atmosphere.

If we were to require the 2 grams per mile  $\text{NO}_x$  standard of the auto industry as proposed by the administration, by 1990 we would add 22 million tons of nitrogen oxide per year. The base is 24 million tons.

If we were to use the accelerated new source performance standards, for industrial facilities, and the committee's 1 gram per mile  $\text{NO}_x$  standard, that would still add about 9 million tons of nitrogen oxides per year by 1990.

What we are saying with both charts is that this committee bill does not roll back pollution with respect to either of these which are two of the serious pollutants. All it does is slow down the increase in our discharge of these pollutants into the atmosphere.

Mr. McCURE. With respect to nitrogen oxides, that is a combination on the chart, a combination of stationary sources and autos.

Mr. MUSKIE. Exactly.

Mr. McCURE. There are varying strategies on both.

Mr. MUSKIE. But the sulfur oxide is the most important.

There has been a lot of talk about the cost of dealing with air pollution. Here is the projected cost for electric utilities. All of us have seen the television advertisements, we have heard the radio advertisements and seen the newspaper advertisements of the electric utilities and their complaint about the cost. This is the projected cost, \$4.8 million over the next 10 years for utilities. That is the additional cost to capital investment, the capital planning, which is about \$180 million. This takes them up to \$212 million, which is about 4.8 percent. They say that is too much.

The steel mills are a little higher. They have a more complicated problem. This is their projected capital investment; pollution requirements would add 12.5 percent; with respect to petroleum refineries, an additional 5.7 percent; with respect to pulp mills, 9.3 percent.

There are some who say that even 5.7 percent is too much. They will have to make their own case, but this put the additional cost in perspective. The source of these figures is EPA's Office of Planning and Evaluation.

Mr. Moss. The last chart that we looked at does have some of the features that we shall want to get from the study; that is, how much more is it going to cost to meet certain standards and will that make certain industries unavailable to certain areas? We want to know what the health factor will be, whether that amount of pollution will have any impact on the health and welfare of people. We even want to know visibility, which the Senator was talking about earlier.

I also observe that the first chart that was up there indicates to me one of the fallacies of the provisions of the bill. It tells us that we are getting 34 million tons in the air now and that might go up by 8 or 7 or some other number of tons. That sounds awfully bad in the abstract. We think about 34 million tons over this country. We are talking about SO<sub>2</sub>. Well, we have to pin it down into what that does and where it is concentrated.

Mr. MUSKIE. If this does not do anything, let us repeal the Clean Air Act. It is this kind of thing that we have been writing environmental legislation for: because people have been dying; because buildings have been damaged; because plant life has been destroyed; because agricultural crops are being destroyed. That is what it is doing. This represents a growth in that damage.

Mr. Moss. That is exactly what we want to know. We want it down to specifics so we can look at it and say, this is going to be the effect. When we know that, then we can make a decision as to whether or not we want to legislate in that particular area.

I point out that, under the bill, EPA is also authorized to intervene in State decisions regarding permit issuance. Although the States are to determine what constitutes "best available control technology" on a case-by-case basis, taking into account energy, environmental, and eco-

conomic impacts and other costs, the Administrator can contest such State determination in court. Every State action on area classifications and permits would be part of the State implementation plan and subject to EPA review and approval. I fail to see how the committee bill is less restrictive of State prerogatives than existing EPA regulations!

Mr. STONE. Will the Senator from Utah say whether the section 6 implementation has been reduced to map form? Is there a map which would show the specific air shed areas to which the nondeterioration would apply and to what extent?

Mr. MOSS. Yes, there has been a map with overlays pointing out the various impacted areas. I intend to use that when my amendment comes up tomorrow. I think it will be very shocking to the Senators to see what is left in white after we take out the areas which, by EPA standards, existing standards and those that will be provided in section 6, will, for one reason or another, not be available for any additional deterioration.

Mr. MUSKIE. Is that the so-called buffer zone map?

Mr. MOSS. No, it is not the buffer zone map. Buffer zones are on one of the overlays.

Mr. MUSKIE. Anything that presumes to portray this bill as a buffer zone bill is a complete distortion.

Mr. MOSS. I shall deal with that.

Mr. MUSKIE. I say that in advance, because I have looked at those buffer zone maps since last July. They are complete distortions. They can only be described as a lie as applied to this bill.

Mr. STONE. Is there a map that the committee or its staff certifies as being accurate or correct which does show the breakdown of the airshed implementation of section 6?

Mr. MUSKIE. There is no way of writing such a map for a very simple reason.

First, only mandatory class I areas can be mapped. They are less than 1 percent of the land area of this country.

With respect to the intrusion problem, which has only to do with the extent to which industrial or other similar facilities outside the class I areas may intrude upon the clean air values of class I areas—which are national parks and wilderness areas—the extent to which that intrusion will be permitted or monitored is done on an ad hoc case-by-case basis by the States, with the States having the veto power.

In other words, the Federal land manager has the responsibility to protect his area's clean air values. If he feels that requires that he intervene in a State decision or State proceeding to set air pollution standards for adjoining land over which the State has jurisdiction, then he has the obligation under the bill to intervene and to make the case that his area's clean air values are in jeopardy if the pollutant permitted by the State decision goes forward. But the State makes the decision as to whether or not he is right. The State has the option under this bill to decide that he is wrong and to proceed with its decision. There is no way of anticipating, by any kind of map, what kinds of pollution issues will be raised around these Federal areas or what decision States will make with respect to them. So there is absolutely no way of mapping, any more than it is possible to map the Supreme Court's decisions for the next year.

Mr. McCLURE. I want to mention one additional element: When the Federal land manager makes the decision to intervene in the State decisionmaking process, it is with regard to only one thing; that is the air quality-related values for which the Class I area was created as a Federal area.

Mr. MUSKIE. Exactly.

Mr. MOSS. That is without further definition than just those words, "air quality-related values."

Mr. STONE. The Senator from Florida is a little troubled by the lack of predictability of mapping, as it were, of the airshed areas to be affected by section 6 nondeterioration restrictions.

The Senator from Florida wants some additional protection over and above what the current statutes provide. He wants, in the words of the Senator from Maine, further protection.

Mr. MUSKIE. This bill provides less protection than current law.

Mr. STONE. Then the Senator from Florida is reinforced in his cosponsorship of the Moss amendment.

Mr. MUSKIE. Which provides even less protection.

Mr. STONE. Which would require a study for a year to find out what is the appropriate further protection to additionally protect the airshed areas impacting on these class I areas. But the Senator from Maine says at this stage of the proceeding there are no maps that could be advanced as the impact maps, as it were: is that not correct?

Mr. MUSKIE. We have tried, to find a way to apply national solutions across the vast diverse regions of this country so that they impact exactly equally upon conditions that are exactly the same.

Mr. STONE. That is our goal, is it not?

Mr. MUSKIE. We tried it with transportation goals in the 1970 law, and we had a virtual revolution across this country from those areas which were asked to do more than they felt they reasonably could as a result of the application of national standards.

The same thing is true in a lesser degree with respect to automobile standards.

Now you have more and more States coming in and saying, "Well, we need a special law." So all of the pressure is the reverse of what the Senator is talking about. They want to fractionalize and fragment this business. The Senator from Virginia wants each State to set its own standards. Well, why did we get into national standards in the first place? Because of competitive disadvantage.

So there is no way, and I say it with all sense of realism, there is no sense of writing a map of the kind of things the Senator is talking about. Does the Senator think he is going to get a map out of the Moss study? The only kind of map you can conceivably get out of that is a map that imposes no air quality standards upon clean air. If you want something that adjusts to the requirements of individual areas this committee bill does because it gives you an increment that adds to whatever the air quality presently is in an area.

It does not impose a uniform ceiling at all. That is what you want. I can hear myself listening to the Senator from Florida in a year or two saying, "Senator, don't you know better than to tie that kind of a handcuff on every area of the country, whatever its differing circumstances?"

You have to choose a course somewhere in between.

Mr. STONE. The Senator is quite correct, and that is why the Senator from Florida does not intend to support the amendment of the Senator from Virginia (Mr. William L. Scott). But the Senator from Florida would like to have some kind of a forecast of the impact, and the Senator from Florida did not ask for an absolutely equal impact all across the board, all across the country, as the Senator from Maine was talking about in his transportation studies and other studies.

Mr. McCLURE. If the Senator from Florida believes we are going to get more predictability under the Moss amendment than under the committee bill, I think he is sadly mistaken. If the Senator thinks he is more apt to get a map under the EPA regulations than under the committee amendment, I think the Senator is sadly mistaken. The uncertainty of the incremental additions and the uncertainty of the kind of map the Senator is talking about is at least as great and, in my judgment, greater under existing law and existing regulations than it is under the committee measure.

If you adopt the Moss amendment you are back to the existing law and existing regulations which will impose a greater uncertainty than the committee measure with which we are dealing, and you would have gone in exactly the opposite direction that you say you wish to progress.

Mr. STONE. The Senator from Florida fails to accept and understand that you will get less certainty and less knowledge out of a study than without a study.

Mr. McCLURE. That is not the question. The question is do you progress under the existing law and the EPA regulations that are implementing that law, with all of those uncertainties, which I agree are great, or do you progress under the uncertainties of the committee bill which, I believe, are less onerous than those of the existing law.

The study only tries to set after a year's time how bad is the situation under the existing law. The amendment of the Senator from Utah only gives us that information after the fact, tells us how bad it has been for the year which we have been studying and living under the current uncertainty.

Mr. Moss. I think quite to the contrary. What the Senator from Utah's amendment attempts to do is to say, "Hold where we are now on air standards, study it for a year, come back with all the data we need to tell us what it is going to be and then decide whether we want to take on this second uncertainty," which the Senator from Idaho referred to.

Mr. MUSKIE. I have found around here that when we are dealing with formulas of distribution to several States you had better have a formula which benefits the majority of the States or you are not going to get a favorable vote. I can see the map that the Senator from Florida envisages, and I can see a map that imposes more stringent requirements on a majority of the States than the law in force, whatever it is, and I can see the Senate amending the map to insure that a majority of the areas represented by the Members of this body have lesser and not tougher requirements to meet.

Mr. STONE. The Senator from Florida would not be voting for less, he would be voting for more.

Mr. MUSKIE. But a majority of your colleagues would not.

Mr. STONE. That may be, but the Senator from Florida can only cast his own vote. The Senator from Florida is seeking the kind of knowledge of impact on the environment that will allow a wise move, something that will balance the loss of production, the loss of investment, the loss of jobs, with an enhancement of the air quality on an acceptable balanced basis, and the amendment of the Senator from Utah requires just such a study that will allow an intelligent vote 1 year hence rather than an assuming vote at this stage.

Mr. MUSKIE. For 13 years.

I say to the Senator from Florida I doubt that he will have the kind of certainty at the end of 1 year that he is asking for.

Mr. MOSS. Proponents of nondeterioration cite studies showing that growth would not be impeded under a policy of nondeterioration. They say that by applying modern pollution technology, virtually every size and type of industrial source may be constructed, under the provisions of S. 3219. I disagree. First of all, there are at least as many studies concluding that growth would be restricted. It should be obvious to those of us familiar with the clean air issue, that growth will be limited even if the policy of nondeterioration were not enacted or implemented. In many areas of the United States—in fact, in areas where most of our industry is located and where most of our citizens live—the ambient primary and secondary standards have already been exceeded. The pollution levels set by these standards are the absolute limit in areas with superior air quality, and are the defined goals in areas where pollution exceeds the standards. If ambient standards are already exceeded in many areas, a strict tightening of these standards in clean air areas can only further impede the construction of new facilities.

#### COMPETING NATIONAL GOALS

It is time we stopped trying to fool each other about issues involving the catch words "clean" and "environment." I am not prepared to tell you that the existing national ambient standards are adequate to protect every living person or thing in the United States. It is obvious that breathing anything short of air "pure as the driven snow" will not, under normal circumstances, enhance human health. We all recognize that any air pollutants could have adverse health effects over some period of time, on some individuals. This is no startling revelation.

Having recognized this fact, our job in setting national policy is to determine at what level, under existing technology and economic circumstances, we will accept less than pure air in order to balance this important objective against the equally important objectives of fostering a healthy economy, a healthy domestic energy industry, and a healthy job market.

Air, after all, is a natural resource and must be conserved as such. On the other hand, it must also be utilized for man's ultimate benefit. This includes the use of air to produce energy necessary for our domestic well-being.

Now, I am not philosophically opposed to the idea of nondeterioration. Neither am I prepared to say that what is good for industry is good for America. However, anti-industry measures are not necessarily pro-environment either. Until we know the facts, precipitous action is foolish and unwarranted.

Let us insure that in our enthusiasm to make our environment as acceptable as possible we do not start a chain reaction of two steps forward for air, and three steps backward for our total environment. We must remember that it has been man's ability to alter this environment through industrial development that enables this planet to support upward of 4 billion people. For too many of these people, change in the environment which expedites the exploitation of Earth's resources, including air, could not come soon enough. I think we have learned the hard lessons of the past that we cannot act irresponsibly in using our environment. But we cannot stop using our environment, either.

#### MAKING POLICY FOR 1976 AND THE FUTURE

Proponents of nondeterioration continually cite language contained in previous enactments of the Congress as the original basis for the concept of nondeterioration. Even if we accept this history as accurate, let us not forget that our responsibility is to examine, define, and where appropriate, enact public policy for the benefit of our citizens in 1976 and hereafter; not to let ancient history, whether legislative or otherwise, dictate our course. I doubt that there is a Member of this body in office in 1970, who realized that the policy of nondeterioration was embodied in the Clean Air Act that we then voted on.

We must recognize that air is a renewable resource. It does cleanse itself when pollution levels decrease. Pollution levels have been decreasing in many areas in recent years largely because of the existing act. Contrary to the impression advanced by proponents of non deterioration, the skies over the national parks and wilderness areas are not going to turn black, with helpless animals choking from pollution, if we implement a comprehensive and necessary 1-year study by deleting nondeterioration from this bill. We should consider it again with facts in hand.

#### ADDITIONAL STATEMENTS SUBMITTED

**Mr. MUSKIE.** I want to comment briefly on the budgetary impact of S. 3219, the clean air amendments.

The bill is an authorization bill and, as such, does not provide budget authority. Actual funding is done through the appropriations process. In the past the Committee on Appropriations has not provided funds for the clean air program at the levels authorized by the bills we have enacted over the past few years. While I understand the need for restraint exercised by the Appropriations Committee, I believe that as a nation we cannot afford to underfund our environmental programs. Clean air, clean water and a healthy environment in general cannot be achieved without committing an adequate level of funds.

The clean air amendments, as reported by the Committee on Public Works authorizes \$867 million for clean air programs over a period of 3 fiscal years plus the transition quarter. For fiscal 1977 the bill authorizes \$292 million. Were the bill to be fully funded, outlays in fiscal year 1977 are estimated by the Congressional Budget Office to be \$256 million.

Actual budget authority and outlays in 1977 for clean air are likely to be considerably less than this amount as the Senate has already

acted upon the HUD-independent agencies appropriation bill that funds the clean air program. This bill provided \$147 million in budget authority for the program, about one-half of the amount authorized in S. 3219 for clean air in fiscal 1977. At this level, outlays would be approximately \$156 million.

How that funding for the clean air programs measures up to the budget resolution can best be determined by looking at the Appropriations Committee's allocation to the HUD-Independent Agencies Subcommittee. The subcommittee's allocation, when adjusted for the subcommittee's action on the FHA fund is \$52.8 billion on budget authority and \$36.8 billion in outlays. The HUD-independent agencies appropriations bill, as passed by the Senate, provided \$43.3 billion in budget authority with resulting outlays estimated to be \$34.6 billion thus there is \$9.5 billion in budget authority and \$2.2 billion in outlays remaining for possible supplementals. These amounts would be available—if Congress saw fit—for additional expenditures in veterans' benefits, housing programs, science and space programs, and environmental programs such as clean air, which are under the jurisdiction of the HUD-Independent Agencies Subcommittee.

Given the amount of these remaining funds, it is fair to conclude that S. 3219, as it is being funded in the regular appropriation bill and even if it were fully funded, would be consistent with the budget resolution.

Lest anyone think, however, that this remaining \$9.5 billion in budget authority and \$2.2 billion in outlays constitutes an open fund from which many new expensive projects can be paid for, let me point out to the Members—as I did when the Senate passed the HUD appropriations bill—that several possible supplementals may use much of the remaining funds.

Our latest calculations indicate that several supplementals for veterans programs plus funds for EPA construction grants may use up \$6.9 billion in budget authority and \$1.9 billion in outlays of these remaining funds. I would also point out that we are not yet even into fiscal year 1977 and further unexpected demands could easily arise so by no means do we have a windfall.

In the coming months, we must be sure to watch closely how any remaining funds are utilized. In cooperation with the Committee on Appropriations, the Budget Committee intends to review carefully the many supplemental requests for appropriations to make sure that the Senate's spending decisions are consistent with the budget resolution.

Mr. McCURE. The definition of a major emitter is an important aspect of the no significant deterioration policy contained in the bill before us. The bill language states that the source must meet two criteria; the source must be among the 28 identified categories of facilities, and must also have the potential to emit over 100 tons per year. The bill language also gives the Administrator of EPA the authority to add categories to the 28 listed. It is important that we establish guidance for the use of this authority.

It is my understanding that this authority should be used cautiously and only after careful analysis indicates that a category of sources clearly presents a significant problem requiring the application of the requirements and procedures that are a part of the conditions major

emitters must meet prior to approval for construction of the source. Is that the same understanding reached by the floor manager of the bill?

Mr. MUSKIE. Yes. This authority is neither a permissive license to add extensively to the committee's list nor an ironclad definition of sources forever frozen in print. The committee selected 28 categories from a list of 190 compiled by the stationary source program within the Environmental Protection Agency. The fact that the committee selected less than one-sixth of the sources on that list indicates that the committee was selective about the types of facilities that it feels are necessary to be reviewed in order to prevent the significant deterioration of air quality in clean air areas. The 28 categories also indicates that the committee felt that some categories should be added to the rather narrow list which EPA presently uses under its present non-degradation regulations.

EPA's present regulations require review of only 19 categories of major emitters. The Committee made substantial additions to this list, feeling that many sources had been ignored by EPA which had the potential of having significant impact on air quality.

The EPA will need to chart a middle course in this area. Any additions to the list of 28 must be based on careful analysis. Yet the agency has a direct responsibility to protect air quality in clean air areas, and can only fulfill that responsibility if sources that create pollution problems are adequately reviewed and controlled prior to their construction.

Mr. McCURE. I have some concern that EPA might not exercise adequate restraint in selecting new categories to be added to this list of 28.

Mr. MUSKIE. That is a legitimate concern, and one that I believe has received instruction in the committee report but could benefit from further guidance at this time. The EPA has obviously shown restraint in this area already—in fact more restraint than the committee felt was proper to protect air quality in clean air areas. The Agency made its own review and determination when it published its regulations December 5, 1974, and in those regulations only covered 19 sources. That was clearly an act of restraint rather than an act of aggressive over-control. We would expect and instruct the Agency to continue to exercise care in any additions made to this list.

To be more specific, the Agency should apply this authority to two particular cases: First. In the first case, new processes may be developed which are unknown to us at this date but which will create new activities that bring potential for significant adverse effect on air quality. We can only assume the development of such technologies or such activities, and it is essential that the Agency have the authority to place such activities on the list as they are developed and as control is justified; Second. In the second case, there may be existing processes or activities that are found, through subsequent analysis or through existing information that was not known to the committee at the time of its decision, that do in fact create significant problems for the prevention of significant deterioration. It may be that such sources are existing processes that for some reason have an accelerating rate of growth that is more substantial than other kinds of sources. Or it may be that their emissions are more troublesome than early analyses had indicated.

In any event, we would expect the Environmental Protection Agency to examine all of these factors carefully, prior to any additions to the list.

Mr. McCLOURE. It is certainly not my intent to indicate that sources that clearly need to be added to the list be somehow kept from that list. But I did feel it was necessary to also insure that the discretionary authority provided to EPA in this language is used carefully and selectively by the Agency.

#### THE NEED FOR CLEAN AIR

Mr. CULVER. This week of the Senate begins its consideration of S. 3219, a bill to amend the Clean Air Act of 1970. The amendments by the Senate Public Works Committee are the product of very extensive and serious analysis of our Nation's efforts to enhance and maintain air quality. We have learned much during the last 6 years about the need for clean air and what must be done to achieve that objective, and that experience has demonstrated that certain midcourse corrections are in order. Though there are sections of the present bill which I opposed in the committee, I believe we have developed, under the leadership of the chairman of the full Public Works Committee and the chairman of the Environmental Pollution Subcommittee, an extension of the Clean Air Act which makes the program more flexible as well as more responsive to both long-term environmental and economic considerations.

These changes to the 1970 Clean Air Act must not be misread as a relaxation of our commitment to improving air quality. Although the committee recognized the need to balance our environmental goals with the requirements of orderly social and economic growth, it has not altered its conviction that the basic assumptions of the Clean Air Act—the protection of public health and welfare from adverse effects of dirty air—are as worthwhile and important today as they were when we first embarked on an effective program to reduce air pollution. From an examination of the progress and problems of the last six years, it is apparent that dirty air remains a major problem.

One of the noteworthy developments over the last few years is a greater understanding of the economic impact of our environmental controls. Contrary to the early claims that clean air and clean water legislation would force rampant plant closings and unemployment, the Council on Environmental Quality—CEQ—recently indicated that plant closings and job losses resulting from environmental laws have not been significant. As a matter of fact, these laws have generated economic activity and employment. Earlier this year CEQ released a report stating that 1975 expenditures by both the public and private sectors for pollution control would amount to \$15.7 billion, and that each billion dollars would generate 66,900 jobs. Since 1971, there have been only 75 plant closings partly attributable to environmental regulations, resulting in a loss of only 15,700 jobs; and many of these plants were being phased out anyway. The Iowa Department of Environmental Quality has estimated that 30,000 jobs have been generated in Iowa alone by our environmental standards. These figures show that we do not necessarily have to sacrifice decent environmental protection at the expense of economic well-being.

Last fall Russell Train, Administrator of the Environmental Protection Agency—EPA—reported that smog from our Nation's down-towns and urban areas is sweeping into rural areas many miles away; and the National Academy of Sciences—NAS—has reported to the committee that emissions are being transported 300 miles downwind. I believe events in Iowa last summer clearly demonstrate the widespread problem of air pollution and substantiate that air pollution is no longer a uniquely urban affliction. During the months of July and August, the Iowa Department of Environmental Quality issued Iowa's first statewide pollution alert. As a result of the high pollution levels last summer, people with heart conditions and respiratory problems were encouraged to stay indoors; and many people in Iowa experienced coughing and eye irritations. Consequently, several manufacturing plants reduced emissions, and utilities began cutting back on the use of pollution-producing fuels.

Testimony before the Environmental Pollution Subcommittee last year repeatedly suggested that the effect of air pollution on public health is very dangerous, and that there is no scientific basis to justify the relaxation of the present national standards. Most recently, the National Cancer Institute has estimated that 60 to 90 percent of all human cancers in this country are caused by environmental impurities.

Several studies have reported that the margins of safety for the standards are quite modest; and, as a matter of fact, the National Academy of Sciences has recommended the adoption of a short-term standard for nitrogen dioxide to supplement the present standard during peak periods. There is growing evidence that low-level concentrations—those below the national secondary and primary standards—have serious adverse health and welfare effects.

Of particular interest to many individuals is the nondegradation provision which protects air cleaner than the national standards. In addition to the adverse health and welfare effects of low-level concentrations of emissions, which I have briefly mentioned, there are several other important reasons for supporting a sound policy of nondegradation. There is a need for the Federal Government to protect the pristine air quality in such areas of national environmental importance as national parks and wilderness areas; and, moreover, since the present regulations were formulated by EPA as a result of judicial interpretation, it is essential for Congress to determine a flexible and reasonable plan for preventing significant deterioration. These factors have been clarified in a recent telegram from Governor Robert D. Ray of Iowa, acting as Chairman of the National Governors' Conference, to the chairman of the Public Works Committee, and in a recent editorial from the Des Moines Register, I believe this material is worthwhile, and I ask to include it in the Record.

[From the Des Moines Register, Feb. 10, 1976]

#### KEEPING AIR CLEAN

Should clean air be allowed to deteriorate, or should it be preserved?

The Environmental Protection Agency (EPA) wants to insure that regions with unpolluted air stay that way by making utilities in such areas use the most advanced pollution control technology. However, the Senate Public Works Committee has voted to require the EPA to consider the economic impact of anti-pollution controls in deciding whether a new powerplant must install equipment

to clean up the smoke from its stacks. Under the proposal, if stack scrubbers prove too expensive, they would not be required.

Environmentalists fear the amendment may ease the way for construction of the giant Kaiparowits powerplant in scenic southern Utah. The site is fewer than 100 miles' from some of America's most beautiful natural areas, including the Grand Canyon. Plans are afoot to build six more coal-powered generating plants in the same region if Kaiparowits is approved.

The Senate committee's vote is symptomatic of an inclination to weaken the Clean Air Act. A House committee also is considering changes in the act. "Clean air had sounded like a great idea [in 1970]," wrote Karen Elliott House in a recent Wall Street Journal, "but the inconveniences required to achieve it sounded horrible."

More horrible is the prospect of huge powerplants pouring dirty smoke into one of the most nearly pristine regions of the country.

It makes sense to insist on stringent standards in clean-air areas to maintain purity instead of having to restore air quality later. The Environmental Protection (not Correction) Agency should not be hamstrung in keeping air-quality levels high.

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TELEGRAM FROM GOVERNOR ROBERT D. RAY, CHAIRMAN OF THE NATIONAL GOVERNORS' CONFERENCE TO THE HONORABLE JENNINGS RANDOLPH, CHAIRMAN, SENATE PUBLIC WORKS COMMITTEE

With regard to the non-significant deterioration of air quality as related to the Clean Air Act amendments, I would like to advise that the policy of the National Governors' Conference (NGC) calls for a decision by Congress to allow each state maximum flexibility to incorporate local values in its decisionmaking. An amendment to be offered by Senator Moss to S. 3219 would put off Congressional action on this issue. Many states are concerned that the passage of such an amendment would result in continuing litigation over present court-ordered federal regulations and bring about uncertainties among the states and other interested parties in planning for orderly development in clean air areas. Therefore, I urge you and your colleagues to insure that the vital issue of prevention of significant deterioration is settled now by Congress. No action by the Senate should allow the state decisionmaking authority to be abrogated. Such action would represent a severe setback to our efforts to formulate a reasonable national policy on prevention of significant deterioration of air quality. We are concerned that the Moss amendment will provide an obstacle to this goal.

Mr. BUCKLEY. Some of the comments have indicated that the committee's version of the provision to prevent significant deterioration would regulate cars or the construction of homes or agricultural production. This, I fear, is based on some of the misstatements that have been made about the committee bill. Earlier this year I made a brief analysis of some of the statements and misstatements on significant deterioration.

I ask that the analysis be printed at this point in the Record.

#### THE MYTHS OF SIGNIFICANT DETERIORATION

The Senate will soon consider S. 3219, the Clean Air Amendments of 1976. During that debate, the major issue will probably involve the provisions of section 6, the language that defines the existing requirement that clean-air areas be protected against deterioration.

In preparation for that debate, I have read some of the analyses of the bill that have been sent to the Congress. If one is to rely on these assessments, our bill sounds exceeding ominous: a source of economic stagnation and paralysis to growth. Such an assessment is wrong. It is wrong because the analyses of our bill are based on misconceptions and misstatements.

There is value in examining some of these statements, to compare them with the realities of S. 3219. One of the most startling publications is a broadsheet that carries no identification, but which has been circulated by the U.S. Chamber of Commerce. This statement appears among its specific declarations:

"Consulting geologists at Kent State University studied the impact of significant deterioration regulations on the 11 States where major portions of the nation's coal, oil shale and uranium are found.

"They concluded that:

"(1) New processing of approximately 90 percent of Kentucky's coal reserves could be prohibited;

"(2) West Virginia could suffer inhibitions affecting more than 86 percent of its coal areas. . . ."

This is a startling assertion, one deserving careful attention. Such attention shows that assertion bears no relation to the requirements of S. 3219.

This quoted statement is based on a study by Dr. John Anderson, made under contract for the American Petroleum Institute. Dr. Anderson, a geologist who holds the title of full professor at Kent State University, conducted his study based on 1974 regulations issued by the EPA. It was not based on the bill as reported by the Committee on Public Works. Its assumptions vary sharply from the requirements that are contained in S. 3219.

The Anderson approach was clear cut: it drew arbitrary, 50-mile buffer zones around nearly all Federal property: national parks, national monuments, national forests, and so on. It concluded that no energy development could take place inside any such zone. Because Kentucky and West Virginia and adjoining states contain extensive national forest areas, the Chamber's document concludes that these coal reserves are untouchable.

But as I indicated, this conclusion bears no relationship whatsoever to the provisions of the bill that is before the Senate. Mining is not even one of the specific industrial categories listed in the bill for coverage by state significant deterioration permit review.

In addition, only national parks and national wilderness areas are included in the Senate bill in the category relating to the Anderson study. Third, the Senate bill establishes no arbitrary buffer zones, but creates a mechanism for case-by-case review by the State of a proposed source's effect on the air quality values of the national park or the national wilderness areas.

Thus S. 3219 will have no adverse impact on coal extraction in West Virginia, Kentucky, or elsewhere.

Mr. President, the critics of this bill have taken research that may—I repeat, may—be valid in interpreting present EPA regulations, and used it for a specious attack on the Senate bill. That is wrong, and I believe it should be so recognized.

In a quick check, I have found numerous statements and erroneous assertions that are being circulated by industry in an effort to undermine the Committee's bill. I have put together a number of these points that I hope will help to clarify this issue for my colleague.

*Assertion:* The Committee's bill goes considerably beyond existing law.

*Fact:* The requirement to "protect" existing levels of clean air has been law since 1967. This bill refines that requirement more precisely, replacing existing EPA regulations with a defined Congressional policy.

*Assertion:* Class I areas will be off-limits to construction of major, new polluting sources.

*Fact:* That is correct. But since Class I areas are national park and national wilderness areas, logic and existing national park and wilderness legislation preclude development inside those areas of steel mills or refineries, the types of industry covered by the significant deterioration provision.

*Assertion:* The significant deterioration provision will have a more severe impact on some State than on others.

*Fact:* Just the opposite is true. By setting a single standard for determining significant deterioration, the bill equalizes the impacts as much as possible. Certainly this is true in comparison to the more rigid, three-tiered scheme in the EPA regulations, which industry now appears to favor.

*Assertion:* "The mandatory establishment of Class I zones will drastically limit, if not prohibit, the siting of large fossil-fuel electrical generating facilities in California." (Pacific Gas and Electric Co.). That company has circulated maps showing "how little of the State (of California) remains for development," based on 50-mile buffer zones around "California's national forests and national monuments." "These buffer zones, within which major sources will also be prohibited, can extend 150 miles." (Pacific Gas and Electric).

*Fact:* National forests and monuments do not receive Class I review unless the State and the Federal Land Manager agree to provide Class I designation for specified areas. Each plant-location decision will be made under the Senate bill after a case-by-case analysis on the air quality values for which a particular national park or wilderness is operated.

*Assertion:* Assateague Island National Seashore would be established as a Class I area and there would be a 55-mile buffer zone around the seashore

"within which any industrial, commercial or residential development would be strictly limited." (Delmarva Power).

*Fact:* Any designation of a national seashore as a Class I area would be made jointly by the State and the Federal Land Manager; it is not mandated by the Senate bill. Each major facility proposal would be reviewed separately on the basis of air quality values; there would be no reference to a buffer zone. The provisions for analyzing significant deterioration involve only specified types of major new industrial sources; they have no impact whatsoever on commercial or residential development.

*Assertion:* "No new construction of a major facility may be begun in an area with air better than the Federal Standards without an EPA permit." (Deere and Company). The provisions on significant deterioration give "a single appointed official in Washington, D.C., the final say-so on how states and their citizens can use public and private lands." (Chamber of Commerce).

*Fact:* The Senate bill augments reliance on state authority. The bill requires a state permit, not an EPA permit. It is the present EPA regulations that could be construed as increasing reliance in Washington.

*Assertion:* In discussion expansion, a hypothetical plant might take up "65 percent of the allowable pollutant increment established by the Senate bill. But if, several years after our construction program is underway, significant construction is begun by several other employers or by a municipality in the same or nearby cities which uses up the remainder of our allowable increment (and this appears quite likely), we would simply have to stop building." (Deere and Company).

*Fact:* This is false. The Senate bill creates a pre-construction review process. Once the state agrees to permit construction of a facility, this legislation imposes no restrictions that could halt construction, unless the source violates the terms of the permit itself.

*Assertion:* "The technology necessary to determine with reasonable precision whether the proposed allowable non-deterioration increments are met is not presently available." (Deere and Company).

*Fact:* Prevention of significant deterioration involves a permit-review process, based upon fully available measurement and modeling techniques to determine the dispersion of anticipated levels of pollutants.

*Assertion:* This bill requires industry to study the air-pollution effects of a proposed plant.

*Fact:* That is correct. Existing law requires such examination in relation to the EPA regulations and through State implementation plans relating to ambient standards. It is prudent policy that the owner of any proposed major new industrial source—a steel plant or a power plant or a chemical complex—be required to tell the State what impact can be expected from that proposed facility so that State can judge whether it will adversely effect the State.

*Assertion:* Even in Class II areas, "smaller facilities with package boilers, such as small industrial, commercial, and public buildings, and large apartment houses, would also be restricted." (Chamber of Commerce).

*Fact:* This bill establishes a single national norm, allowing extensive growth up to that norm. According to Delmarva Power, "A plant as large as 2,000 megawatts could be built without violating the Class II increments for SO<sub>2</sub> or total suspended particulates (TSP) proposed by the Senate."

*Assertion:* "Any new or modified plant would have to use the best and most expensive air pollution control equipment, plus use the lowest sulfur coal." (Chamber of Commerce).

*Fact:* The significant deterioration analysis affect only a few, specified industries, not "any new or modified plant." Thus, it will not affect the vast majority of construction. The Senate bill does not require use of the "best and most expensive" pollution control equipment; it requires use of the "best available control technology," which is defined in the bill as a level to be determined on a "case-by-case" basis by each State, "taking into account energy, environmental, and economic impacts and other costs." Rather than forcing the use of "the lowest sulfur coal," the Senate bill seeks to promote the use of reasonable technology, thus encouraging industry to abandon its present posture favoring the burning low-sulfur coal in preference to the installation of control devices.

*Conclusion:* This analysis is not meant to encompass every statement and misstatement concerning the Senate bill. Rather, I am offering it in a brief attempt to encourage the Senate and the public to study the Senate provision in greater detail. I believe the Committee bill represents a reasonable guideline, one that will provide both for environmental protection and industrial growth. The

Senate bill, ironically, is responsive to the requests of industry clarification of the significant deterioration language. Now the object seems to be to sweep our efforts under the rug in hopes the whole thing goes away.

SUPPORT FOR PUBLIC WORKS VERSION OF THE OZONE PROTECTION  
PROVISIONS CONTAINED IN S. 3219

Mr. DOMENICI. The Senate will shortly consider section 16 of the Clean Air Act Amendments which deals with the current controversy relating to ozone and halocarbons. I would like today to speak particularly to the wisdom of the timetable which is embodied in section 16 as adopted by the Public Works Committee.

After considering the testimony of distinguished scientists in hearings before the subcommittees of the House and Senate, as well as the opinions of disinterested governmental agencies, the committee adopted a responsible timetable for dealing with the halocarbon-ozone depletion controversy. Under this timetable, the National Aeronautics and Space Administration and other Government agencies will continue and intensify their research efforts to obtain more data on the ozone layer and the effects thereon, if any, of halocarbons. These agencies are obligated to make a preliminary report of their findings on October 1, 1976, and a further report on October 1, 1977. If the data obtained from this research justifies regulatory action, section 16 provides that the Environmental Protection Agency must propose regulations controlling the use of halocarbons in aerosol containers by January 1, 1978, with final action not later than April 1, 1978. Also, if necessary, regulations governing other uses of halocarbons, such as in refrigeration and air conditioning, are to be proposed not later than April 1, 1978. Finally, as an important safeguard to insure the protection of the public, section 16 gives the Environmental Protection Agency authority to promulgate regulations to control aerosols at any time prior to these dates—whenever the scientific data warrants such action. In short, section 16 establishes a timely research program as well as comprehensive yet flexible regulatory authority to deal fully with this controversy.

In recent remarks to this body, the acceptability of this time frame was challenged by our colleague Mr. McIntyre, urging the adoption of the amendment to be proposed by Senator Packwood. This amendment, for all practical purposes, would impose a negative burden upfront ban on the use of halocarbons in aerosol containers after January 1, 1978. In support of this amendment, Senator McIntyre suggests that today's fluorocarbon emissions will subsequently cause a substantial destruction of the ozone layer, resulting in serious harm to the public. However, this alleged destruction is based on a hypothesis whose validity has not been established. It is precisely for this reason that section 16 provides for extensive technical research to resolve the matter.

Moreover, contrary to Senator McIntyre's position, there is no reliable basis for assuming that any significant reduction would occur over the 3 months between the January 1, 1978, date called for by the Packwood amendment and the April 1, 1978, date for regulation, if any, issued under the Public Works Committee's version of section 16 to control halocarbon-containing aerosols. My distinguished colleague asserts that there is a "1-percent average depletion of ozone" without

indicating the time period of this alleged depletion. Senator McIntyre's calculation, moreover, apparently covers the release of fluorocarbons throughout the world from all sources, including aerosol containers, refrigeration and air conditioning. The amount of fluorocarbons emitted by aerosol containers in the United States represents one-fourth of the total worldwide fluorocarbon emission. Hence, at the outset, his figure must be substantially reduced.

In any event, as calculated by Dr. Paul J. Crutzen of the National Center for Atmospheric Research, the amount of ozone depletion which could occur—even if we assume that the unproven hypothesis of halocarbon-ozone depletion is correct—is about 0.5 percent over a 3-year period. This figure is regarded as a reasonable calculation by other scientists. To provide a perspective on what this figure means, I would note that the change of 1 percent in the ozone layer over a given geographical location is equivalent to moving 70 miles to the south, inasmuch as ozone levels decrease as one moves toward the Equator.

Thus, the ozone depletion which allegedly can occur from the continued production of fluorocarbons pending the research provided by section 16 is comparatively insignificant. This is true even if we assume that Senator McIntyre is anticipating a 1 percent per annum reduction from the fluorocarbons emitted from aerosols marketed in the United States alone. As I have noted, there is only a 3-month difference in time between the effective date for regulation embraced by the Packwood amendment and that contained in the Public Works Committee's version of section 16. That means that at worst, the additional ozone depletion theoretically possible from the additional halocarbon-aerosol production would be less than three-tenths percent. Under Dr. Crutzen's calculations this would amount to four-hundredths percent.

Senator McIntyre also relies on the unproven theory of ozone destruction to defend the imposition of a negative burden of proof in the Packwood amendment under which industry must disprove the validity of the theory. I believe that this procedural provision has no place in legislation designed to deal with a scientific controversy, particularly when the worst case assumptions indicate an inconsequential effect in the interim period.

As a basic scientific matter, it is an extremely difficult, if not impossible, task to disprove an unproved hypothesis. I wish to remind my colleagues that this hypothesis is based on computer modeling and certain scientific assumptions. There are no known acceptable techniques, as there are in other areas, for example, drug testing, which would permit affirmative establishment of the safety of halocarbons. Senator Packwood's amendment provides insufficient time in which such procedures to establish conclusively the safety of halocarbons might be developed. There is no justification for adoption of the approach contemplated in the Packwood amendment. The Public Works Committee's version of section 16 gives the Environmental Protection Agency fair and reasonable authority to move swiftly and directly to deal with halocarbons, if the facts warrant such action.

I submit that section 16 of the Clean Air Act Amendments represents a responsible and orderly approach to effective resolution of this controversy. This approach, moreover, avoids the grave and unnecessary economic repercussions which might very well occur under the proposed Packwood amendment. Contrary to the suggestion of Mr. Mc-

Intyre, one cannot view the impact of the amendment as limited to the manufacture of the chemical propellant alone. This is only a small segment of an industry which has developed from the use of this ingredient, and includes the manufacture, filling, and packaging of containers and the distribution of halocarbon-containing products. There is no question that the fluorocarbon industry contributes thousands of jobs and millions of dollars to the national economy. As I have previously noted, major industries cannot be stopped and started at the whim of Federal legislation. Section 16, as adopted by the Public Works Committee, I submit, is clearly a preferable way to deal with this matter and I urge the Senate to adopt it without amendment.

OPPOSITION TO NELSON AMENDMENT TO OZONE PROTECTION  
PROVISIONS OF S. 3219

I urge the defeat of the amendment to section 16 of the Clean Air Act Amendments which may be proposed by the Senator from Wisconsin, Mr. Nelson. Mr. Nelson's amendment is similar to the amendment offered by the Senator from Oregon, Mr. Packwood. I have repeatedly expressed my strong opposition to the Packwood amendment. In essence, Senator Nelson's amendment differs only in that it would lead to a ban on aerosols containing halocarbons as of January 1, 1977—less than 6 months from today.

As the testimony before the subcommittees of the Senate and House and the weight of expert opinion indicates, there is insufficient evidence to justify a ban of halocarbon-containing aerosols at this time. This conclusion is further supported by various disinterested Government agencies, and, I might add, has also been adopted in the United Kingdom by the chief environmental agency of Great Britain, as I have also stated before the Senate.

There is little risk and much to be gained by accepting the time frames established by the Public Works Committee in section 16. The section continues and intensifies the research effort to obtain data on the stratospheric phenomena involved. It also provides that the Environmental Protection Agency shall issue final regulations controlling halocarbon-containing aerosols by April 1, 1978, if the evidence warrants such action.

It is clear that the additional production of halocarbons during this 15-month interval beyond the January 1, 1977 date provided in Senator Nelson's amendment will not have a significant impact on the ozone layer even if the halocarbon-ozone depletion hypothesis is proven correct. Section 16 appropriately permits the Environmental Protection Agency to take action against the halocarbon-containing aerosols, at any time the facts warrant such action. Thus, the public is safeguarded at all times.

In this context, the amendment proposed by Senator Nelson contradicts the fundamental purpose of section 16. As noted, by virtue of its negative burden approach, the amendment would ban aerosol containers by January 1, 1977, before the intensive research program provided by section 16 is likely to produce data required to either prove or disapprove the ozone-depletion theory. The amendment therefore undercuts the basic objectives of section 16, which are first, to provide an intensive research program by NASA and other specialized Govern-

ment agencies; and second, at the same time put in place a broad and comprehensive authority to deal in an orderly fashion with any facts developed in this research, without economic dislocations and loss of jobs.

I believe that the Public Works Committee approach under section 16, is clearly the most appropriate means of dealing with this issue. I urge, therefore, the defeat of the amendment offered by the Senator from Wisconsin if the matter comes before the Senate for vote.

## SENATE DEBATE ON S. 3219, JULY 28, 1976

Mr. MUSKIE. The only issue pending before us is the proposed study incorporated in the Randolph amendment. There seemed to be no objection to that study yesterday.

Mr. STONE. The Senator from Utah requested that we not take action on the pending amendment until he could arrive, and he had a previously scheduled commitment that he could not avoid until about 9 o'clock.

Mr. MANSFIELD. I talked with the Senator from Utah yesterday. He was amicable to coming in at 8 o'clock. He said he would be here about 8:15. It places the Senate in a most difficult position, in view of the schedule we have and the time limits attached thereto. We discussed this schedule with the distinguished Senator from Utah and came in at 8 o'clock to give him a chance for a free-wheeling swing, which would take him 4 or 5 hours, he indicated, to present his amendment.

We have a tight schedule; on August 11 we go out until August 23, and then come back for a few more days.

Mr. MUSKIE. May I explore the possibility of other amendments?

I appreciate the right of the Senator from Utah to present his amendment any way he wishes. The pending amendment is for a very simple study. It could have been disposed of yesterday very quickly; or we could have disposed of other amendments. There are 22 or more, I think, pending at the desk.

But the Senator from Utah chose that point because of some fears he expressed, because of the order in which the Randolph amendment was being considered, that consideration at that time might prejudice his rights. So he proceeded to debate his amendment, and I understood we would be doing that at 8 o'clock this morning.

I can see no reason why we should not vote on the Randolph amendment. It does not prejudice the case of the Senator from Utah in any way whatsoever. His amendment would still be in order.

The threat of a study amendment somehow prejudicing the votes he could get exists whether or not the first vote comes on his amendment or the Randolph amendment. It seems to me that over some very ephemeral fears we are being asked to hold up action on the bill.

I desire to make productive use of this hour.

Mr. MANSFIELD. Yesterday with that thought in mind I did visit a number of Senators, but the uniform answer was they were waiting to see what happened to the Moss amendment. So the Moss amendment is the key to the whole process.

Mr. ALLEN. Mr. President, what is the pending business?

The ACTING PRESIDENT pro tempore. Amendment No. 1798, by the Senator from West Virginia (Mr. Randolph).

Mr. ALLEN. At the conclusion of my remarks, I will offer amendment No. 2101, on behalf of myself and the Senator from Florida

(Mr. Stone) and, hopefully, the distinguished Senator from Utah (Mr. Moss). We have had general discussions about the effect of the amendment. It pretty well accomplishes the purposes of the Moss amendment.

Since I did not have an opportunity to make a general speech with respect to the bill itself and we became confronted with the Randolph amendment prior to the time that I had the opportunity to discuss the bill in general, I shall, at this time, make my general remarks with respect to the bill and then be a little more specific as to the Randolph amendment, the Moss amendment, and this perfecting amendment, which is a halfway position between the Randolph amendment and the Moss amendment. While this amendment actually was inserted in the closing minutes of the session last evening, I have not had an opportunity to discuss the amendment in detail with the distinguished Senator from Utah (Mr. Moss), and the distinguished author of the pending amendment (Mr. Randolph). I hope that we can have a general agreement on taking this approach. I hope that there would be general acceptance, even acceptance by the manager of the bill.

Mr. MUSKIE. If the Senator will yield to clarify that point, I assure him he will not have that kind of acceptance from the manager of the bill. I find that the amendment is as objectionable as the Moss amendment for the same reasons, and I am sure that those will emerge in the course of the debate.

Mr. ALLEN. May I then inquire if the manager of the bill does support the Randolph amendment?

Mr. MUSKIE. Yes, it is a study amendment. This goes one step further—it does two things, as I read it. It suspends the implementation of the nondegradation provisions of the bill until the study is completed by the commission. Beyond that, if I understand the last lines of this Allen amendment, it, in effect, delegates to the commission legislative power in the sense that it says this: “and none of the provisions of subsection (g) of section 110 of the Act—”

That being the nondegradation provisions—“in contravention of the recommendations of said Commission as contained in said report shall be enforced or implemented.”

So the commission, by that language, is delegated legislative power, to negate by its recommendations, the nondegradation provisions of this bill. So on those two counts, I object, and I am sure I shall expand on my objections as I listen to the Senator's reasons for offering it.

Mr. ALLEN. As I understand the parliamentary procedure, this amendment is, itself, subject to amendment. If the Senator could offer some possible compromise with respect to this amendment, possibly agreement could be reached on that.

I do have another amendment in that does not have the second aspect of amendment No. 2101. It merely says, with respect to section 6—that is, the subsection with respect to section 110(g), that those provisions would not be operative until 1 year after the making of the report by the Commission. But section 6 would still be in the law and it would merely be stayed for a period of 1 year after the Commission made its report.

What is the logic of that 1-year stay? Under the Randolph amendment, as I understand it, section 6—that is to say, section 110(g) of the act—becomes effective immediately on the enactment of the bill. In the

meantime, the study goes on. Well, the study might show that the provisions of section 6 were inimical to the public interest; yet the provisions would still be part of the law. We have a law saying, do one thing, have certain requirements, and we have the study that says these requirements are not good, they ought to be something else. So what good has the study done if it is made at a time when section 6 is in full force and effect?

Mr. MUSKIE. The history of the Clean Air Act is replete with such studies. We asked for a study and the Senate approved a half million dollars for a study of the ambient air standards that were established under the Clean Air Act of 1970, at the request of some of those who were regulated by those standards, for the purpose of reexamining the validity of those standards. This was done in 1973, 3 years after the enactment of the Clean Air Act. That study was commissioned for the purpose of examining the underlying bases of the ambient air quality standards.

We proceeded, and we have proceeded for 3 years, to operate under those standards. That study, which took a year to complete, happened to confirm those standards, but if it had not, the standards could have been changed. Nothing was lost; as a matter of fact, a great deal was gained, even if those standards had been changed, because those standards had never been achieved. We had moved toward them and if a lesser standard became the ultimate standard, we at least would have progressed to the lesser standard. So no ground was gained, no time was gained, nobody was discommoded, no economic penalties occurred because of the fact that a study occurred while we were in the process of implementing the policy which was being studied. So there is ample precedent in the Clean Air Act alone for something like the Randolph amendment.

The whole area of environmental pollution is so replete with uncertainties, because ours is a dynamic, ongoing, involving, industrial society, that we can never have a status quo we can measure in all its dimensions. You have to have ongoing studies. Whenever you finally decide for policy you have got to have ongoing studies in order to constantly enlarge your knowledge.

But what the Senator seems to be arguing is we ought not to have a policy of any kind until we reach a point where all uncertainties have been eliminated, until we have established a stable status quo in our industrial society, that will never change, so that every element of the problem is fixed and unchanging, and then and only then can we have a policy that we implement.

But a policy that requires ongoing study, apparently the Senator from Alabama finds objectionable.

As far as I am concerned, I have been studying this field for 13 years, and I expect, as long as I am involved in it, whether it is 5, 10 or 15 years more, we will have to continue to study, to determine whether or not the policies currently being enforced are wise, whether they ought to be changed, whether they ought to be tougher, whether they ought to be more liberal, and that is never going to change, and I hope it does not because we cannot fix our policies in concrete in the way that the Senator's amendment would suggest we ought to.

Mr. ALLEN. The air is polluted by charges and countercharges regarding the legislation before us, S. 3219, the proposed Clean Air

Act amendments. Many Senators, over the past several months, have spoken out about many of the critical matters facing us in the measure. But since the bill was reported to the floor of the Senate with only one dissenting vote, one might be led to believe that the issues dealt with are minor or merely technical, and that the thrust of the legislation is, in fact, uncontested by both the majority and minority members of the legislative committee.

The case is not that simple. When we read the individual or separate views of the members of the committee in report 94-717—we find that almost every Member has had, or has, serious reservations or significant questions about the final product of the committee. In the end, the committee decided that the whole Senate should work its will on the complex issues involved.

I certainly do not have any specific insight about the thinking processes that went into reporting a bill almost unanimously—with qualifications—but I submit that the facade of unanimity is fragile and that this “consensus” bill is more than a matter of “compromises” and “accommodations.” S. 3219 reflects the inability of the committee to come to grips with the age-old dichotomy of fitting reality to desires. In the end, the committee appears to have opted for another statement of verbal support to cleaning up our environment, but without taking on the hard, realistic task of supporting the dream with facts. The chairman of the committee, after endorsing the concept of the legislation, qualified his position by saying:

Limitations on visible emissions and opacity limitations, where they are not related to ambient air quality standards, should not be imposed to restrict expansion of industrial capacity.

In other words, he appears to be saying that we must do something to clean up the environment and particularly the air, but whatever is done cannot be done at the expense of keeping our economy viable and growing.

The distinguished author and floor manager of the bill, the Senator from Maine (Mr. Muskie) took a different tack from the above and said:

... an economic growth policy which abandons environmental objectives would be a foolish course. The Nation must have clean growth.

And certainly with that I would agree in principle—

If the price of that clean growth is to restrain the size of particular activities pending the developments of new pollution control technologies or new production procedures, then new technologies and processes can and will be developed in order to take advantage of the economies of scale.

What the distinguished Senator did not mention in his individual views is that the legislation does not create the “new technologies,” the “new processes,” only that they “can and will be developed.” I am reminded of many legislative proposals brought before this body which assume that the passing of a law will create something from nothing just because it is right and proper that that thing or concept should be invented, designed, built, or implemented in some way. The question “how” is rarely spelled out. Unfortunately, there is an assumption on the part of many legislators—at all levels of government—that “somehow” the free enterprise system will come up with an answer to whatever problem is at hand. I take no backseat to anyone in my belief in the imagination, inventiveness, ingenuity, and produc-

tivity of the free enterprise system, but it is difficult to tell the American businessman to create, or invent, or implement, and then tie his hands with regulations, decisions, laws, and redtape so that he cannot do his job. There is an element of such an attitude in the provisions of S. 3219 and that attitude must be expunged if, in fact, we expect the free enterprise system to be a willing partner in our national quest for a cleaner environment.

Further on in his individual views on this legislation, Chairman Muskie makes the point that—

The burden of environmental protection should rest with those who use environmental resources.

In theory, I believe we can all agree with such a statement as long as we understand that we are all the “users” of the products of “those who use environmental resources.” The chairman appears to be trying to separate types of users of our national and natural resources; it cannot be done—we is them, they is us.

MR. MUSKIE. Will the Senator explain that? I do not recognize in that statement any philosophy that I had.

MR. ALLEN. The point is, when we talk about the users of the environment, that is not just the immediate first user of the environmental resources.

When the Senator says that those who use our environmental resources are the ones who should pay, it goes far beyond that.

MR. MUSKIE. I am not a first-grade student of economics, but when a paper company—and I use an industry in my own State as an example—uses the resources, whether they are forests of Maine, or the waters of Maine, only they are in a position to exercise whatever responsibility is to be exercised with respect to the conservation of those resources.

The individual consumer of toilet paper is not going to be able to go up into Maine and influence the policies that would determine the conservation of those resources.

He will have to pay for the cost of doing so, but he is hardly in a position to implement the conservation policy, whether it is an industry-generated policy or a Government-generated policy.

But obviously, the whole society pays the costs, whether the costs are in the form of a defiled environment or higher prices.

MR. ALLEN. I understand that. But the Senator is saying that what I was saying had no connection with what he had been saying.

MR. MUSKIE. No. The Senator said that I, apparently, was trying to separate users into two classes.

I did not recognize in that single statement any philosophy that I entertain.

MR. ALLEN. I thank the Senator for his concession that the Senator from Alabama is not putting the remarks of the Senator from Maine in an improper light.

My heating bill, his electric bill, my automobile, his automobile, my partially synthetic fabric suit, and his equally processed fabric clothing, are examples of the products we gain as a result of the productive genius and capacity of our free enterprise system. We are both “users” and, to whatever degree we enjoy the fruits of our free enterprise system, we are part of the national problem resulting from fulfilling our basic needs and even our frivolities.

So I say to the distinguished Senator, the cost he talks of as being necessary to bear is one that all of us shall bear. We could bear the cost of zero pollution by accepting higher prices for the goods and services we now enjoy, or paying for the same things through Government ownership and high taxation, or, if manufacturing is curtailed by Government edict and shortsightedness, then the cost we shall bear shall be in the form of shortages and reductions in our standards of living.

One could go on at some length about the "qualifications" built into the legislation that has been presented to us; but I believe if each Member will carefully read the individual views of the members of the committee in the report before them, he will see a pattern of doubt and uncertainty about how to achieve, on the one hand, the national goal of cleaning up our air quality and at the same time, not create a significant deterioration of our standard of living.

While the chairman of the committee has attempted to separate as a "class" those who are "users of environmental resources" and thus falsely lay the burden on "them" for the cleaning up of the environment, there are other Members of the Senate who have favored a "no growth" or "slow growth" policy in order to improve the quality of our physical environment. I have no response to those Senators, because what they advocate is the very opposite of what this country is proud of—individual initiative, progress, and increasing opportunities for all citizens to partake of the life provided by a system of free enterprise.

#### THE PRICE OF CLEAN AIR

It seems obvious to me that we cannot promote the general welfare without cost. The committee leads us to believe that, simply by "cracking down" on the "users of environmental resources," we can achieve clean air but very little is mentioned about the cost of such a crack-down. Who pays for clean air? Of course the users do, but I hope I have already demonstrated that we all are the users. The environmentalists and preservationists tell us that we cannot, as a society, go on doing damage to the environment indefinitely, without paying a price for this damage. What is equally true, however, is that if we decide to reduce the adverse effects which economic activity has on the environment or to alleviate the damage which has been caused by past activities, we must also pay a price for this. There are a wide range of environmental objectives which the society may choose to pursue, but each of these is associated with some real resource costs. Society must decide which environmental controls are worth the expenditures they require and which are not. For most commodities, we rely on the free operation of the market place to make decisions as to how much is enough. We cannot do so with regard to environmental impacts because the commodities which are damaged—water and air for example—are not normally exchanged in the marketplace. Consequently, to achieve optimal environmental controls we must rely upon a process of social decisionmaking occurring through legislation, administrative regulations, and the Courts. Over the past few years, there has been a substantial effort to do just that—to legislate a cleaner environment.

This effort is reflected in the National Environmental Policy Act—NEPA—in the Clean Air Act of 1970, and in the Federal Water Pol-

lution Control Act of 1972, and clearly it is an effort which has not ended with this legislation but one which has merely begun.

Over the past 2 or 3 years, there have been numerous attempts to assess the cost impact of Federal pollution control legislation, primarily with respect to air and water. The most comprehensive assessment of cost is that made by the Council on Environmental Quality, which in its 1975 report suggested that the 1974 to 1983 capital expenditures on pollution control legislation will be \$115.2 billion and that annual expenditures in 1983 will be about \$34.5 billion, or about 1.5 percent of the gross national product in that year. The CEQ estimates are not, however the final word on the subject of costs. The National Commission on Water Quality estimated the capital requirements of the Federal Water Pollution Control Act at costs ranging from \$95 to \$182 billion over this period as compared with the CEQ estimate of \$48.8 billion.

As I am sure everyone here realizes, every industry is involved in the "estimating the cost of pollution control game" and to name one such industry—the electric utilities—they too have come up with staggering figures for the cost of meeting the goals of a cleaner environment. The vice president of National Economic Research Associates of New York, in a report done for the utilities, stated that NERA's estimates of the costs of air pollution control for the industry, combined with the CEQ estimates for other pollution control costs, totaled out to a capital investment between 1974 and 1983 of between \$175 and \$263 billion and annual costs in 1983 of \$55 to \$66 billion. Whether one uses private or Government figures for the basis upon which to make social and legislative decisions, there is no questioning the fact that the sums are staggering. One estimate has the average household paying between \$679 and \$815 annually for pollution control and/or abatement by 1983. Fortunately, or unfortunately, the industry estimators broke down their figures as to cost to the ultimate consumer, the household. From the standpoint of good public relations, this must have been an oversight for everyone knows that it is the "users of environmental resources" who should bear the costs of pollution control, not me, the consumer.

The estimates I mentioned ignore the costs of compliance by the electric utility industry with State legislation where these are in excess of what is necessary to comply with Federal legislation and, moreover, they ignore that component of expenditure on nuclear powerplants which is solely or largely satisfying the need for environmental protection. The Council on Environmental Quality estimates expenditures for environmental controls on nuclear plants at only \$100 million over this 10-year period when most observers agree that a very large part of the expenditures on such plants would not have occurred in the absence of environmental pressures.

The magnitude of these expenditures does not necessarily suggest that they are unwarranted. Environmental degradation is a serious problem which requires serious responses. The estimates do suggest that environmental legislation such as that before us, represents a significant reordering of our national priorities which will only come about at the expense of other national objectives.

The Clean Air Act presently imposes several important overriding imperatives on the complex process of balancing social costs and benefits that should be the heart of intelligent land use planning decisions. These decisions directly affect it, where, when, and under what limitations, continued economic growth may occur in society. In recent years, these land-use decisions have been made primarily by State and local planning authorities under the police power, which is reserved to the States by the Constitution. The Federal Government, constitutionally lacking any specific police power of its own, has instead invoked its power under the commerce clause to partially preempt State and local land use regulation to the extent coincident with the welfare clause of the Constitution.

Under the present Clean Air Act the undisputed overriding imperatives are the requirements to assure compliance with federally set ambient air standards: a primary standard set to assure protection of public health and a secondary standard designed to protect other public welfare values. The issue addressed in S. 3219 is whether Federal preemption of State and local land use planning should be extended further—beyond the current requirements to meet primary and secondary ambient air quality standards. Whether or not the language of the present act contains implicit authority for the Environmental Protection Agency to impose limitations beyond those limits in order to prevent deterioration of air quality that is "better" than that required by those standards is an issue now pending in the courts. These cases are headed toward a definitive Supreme Court decision probably in late 1977.

Acting on order of the U.S. Court of Appeals for the District of Columbia circuit, affirmed by a 4-to-4 vote of the Supreme Court, the EPA has issued "no significant deterioration" regulations that are now in effect in the interim. The purpose of the proposed Senate bill provisions on this subject are twofold: First, to remove decision of the question of statutory intent as to preemption from the courts and, second, generally to require imposition of more stringent substantive "no significant deterioration" limitations than EPA's present regulations now provide.

A substantial number of the Governors of the States have voiced opposition to any extension of Federal preemption beyond the current clearly defined Clean Air Act requirement to meet Federal primary and secondary standards. The Association of the State and Territorial Air Pollution Program Administrators has taken a similar stand. Removal of ultimate resolution of the major policy decision from the courts would not be achieved by enactment of new legislation on the subject at this time. All that would result is that the issues facing the courts would be restated and definitive decision of key constitutional issues by the Supreme Court would be delayed rather than expedited.

In addition to the constitutional questions, many of the States and most of the potentially affected industries have objected to new legislation on "no significant deterioration" at this time for another, significant, reason: Not enough is known about the potential adverse effects on economic growth, employment, standards of living, balance of trade,

national defense, and other major social impacts that will result from these more stringent requirements.

Some of the technical questions which still have to be resolved, and are not so resolved in the present legislation are:

First. Which areas would ultimately be classified as either "no significant deterioration areas" or else "primary impacted areas"?

Second. What would be the effects of the S. 3219 3-hour and 24-hour class II increments and their parallel House percentages? [Sec. 163 (b)(2)]

Third. What would be the effects of class I designations on new facilities in adjacent areas? [Sec. 162(a)(1-4)]

Fourth. What areas ultimately would or would not finally be class I areas?

Fifth. What would be the effect of the S. 3219 definition of what plants beginning operation after 1975 will or will not be subject to "no significant deterioration" requirements?

Sixth. What kind of modeling, background data, and other administrative requirements would be imposed in administration of the new program?

Seventh. What would be the effect of this further air quality imperative on the other social benefits overridden in the land-use planning process?

Obviously, these questions are broad and need further refinement. In an attempt to get some answers to just such questions, the distinguished Senator from West Virginia (Mr. Randolph) posed a series of questions to various Federal agencies last year. He said, in a statement on the floor of the Senate on April 1 of this year:

I asked them to provide me with their best judgment as to the impact of the proposed amendments on future economic development and job opportunities in our Nation.

Senator Randolph provided the responses for all to see in the Congressional Record of April 1, beginning at page S. 4804. I cannot adequately summarize all of the responses, but the tone of the responses was fairly uniform which raises even further questions about the advisability of legislation dealing with "no significant deterioration" at this time, or without further detailed analysis. The Department of Commerce sent Senator Randolph a paper entitled, "Economic Evaluation of Nondeterioration Proposals," and in the first two paragraphs thereof, pretty well sums up the feeling of the agencies and certainly, the consensus of opinion of the industrialists I have talked to about this problem. The paper begins:

The Department of Commerce finds that the economic consequences of non-deterioration proposals have not been fully appreciated. Our analysis and our review of other studies indicate that the significant deterioration proposals under consideration will force a change in the pattern of expansion of economic activity and will result ultimately in a cessation of industrial growth.

The slowing and ultimate cessation of industrial growth can be avoided only if the assumption is made that economically achievable technologies capable of zero pollutant emissions will be available. This assumption is not justified. There is no clear indication that economically available technologies will be forthcoming...

#### SUMMARY

I have attempted in this statement to look at the broadest possible picture with regard to the pending legislation. We know that this is—

next to the pending tax reform legislation—one of the most complex, comprehensive, and far-reaching pieces of legislation to be considered by the 94th Congress. I should like to engage in a colloquy with proponents of the bill with regard to the impact of State and local land-use planning. I hope there will be a full discussion of the economic “cost-benefit” studies that could and should be done with respect to the proposals in the bill. I am not qualified as an engineer nor economist to get deeply into “model building” but I hope the proponents of the measure will, in layman’s language, explain the intricacies and impact of drawing up regulations to affect many industries on the basis of studies pertaining to one or two industries. I shall plan to speak in support of a number of amendments which have been offered to clarify, modify, and define the scope of the studies to be carried out by the proposed National Air Quality Commission. There is the question of “nonattainment” in section 11 which commends itself to full discussion and perhaps, even before we delve into the complexities of “significant deterioration” embodied in section 6 of the bill.

There are many issues which need full discussion on the floor of the Senate and considering the fact that we are talking about the future health and well-being of all the industries in Alabama and indeed, those throughout the Nation which contribute to our high standard of living and provide the livelihoods for the vast majority of our citizens, I hope for a debate that will capture the attention of the American public. In my view, there is nothing quite as important as deciding, or trying to decide, whether or not we shall continue to strive for economic growth or turn in a different direction as suggested by some of the bill’s proponents. There is, in S. 3219, great potential for attacking and perhaps, solving, some basic social, economic, and political problems faced by our Nation.

#### ADDITIONAL STATEMENT SUBMITTED

Mr. THURMOND. The legislation before the Senate involves some of the most important environmental policy questions likely to come before this body. The protection of clean air where it exists, and the promotion of cleaner air where it is now foul and unhealthy, are laudable, ambitious objectives of great importance to present and future generations of Americans. Yet, these goals cannot and should not be considered in a policy vacuum. They must be discussed and established in concert with equally important, worthwhile national goals, such as continued economic growth, energy conservation and independence, and others.

I am particularly concerned about section 6 of S. 3219, which explicitly codifies into Federal law additional air quality standards designed to protect the existing level of air quality in those areas of the Nation where the air is cleaner than the primary and secondary standards of the 1970 act. Such a policy of prevention of significant deterioration, has developed through the unfortunate backdoor route of judicial interpretation and bureaucratic regulation. I agree that it is the responsibility of Congress to clearly enunciate what the policy should or should not be with respect to this difficult question, rather than leaving the matter entirely to the courts and the Environmental Protection Agency.

Yet, if Congress is to make a sound legislative decision on a matter with such profound consequences, it should do so on the basis of the most complete, factual, scientific, and economic data obtainable. Furthermore, any proposal to protect clean air areas and thereby limit the nature and quantity of industrial growth and economic development should be subjected to specific legislative hearings, with an opportunity for thorough public input from all affected parties. Unfortunately, such has not been the experience with the section of S. 3219 dealing with prevention of significant deterioration. Even now, industry, chambers of commerce, development boards, and State and local officials are confused and uncertain about what these provisions will require, and they are even more uncertain about what they will cost.

In my opinion, there is no urgent, compelling need for Congress to hastily write into law a policy that is so little understood and whose impacts have not been fully studied. Before I can lend my support to any such policy, I want to see some more complete and precise information to help legislators better answer the following important questions:

What will be the approximate cost to industry of installing best available pollution control technology, in order to prevent what the committee has defined to be significant deterioration in clean air areas? What will be the cost to industry of doing the environmental-economic analysis necessary to apply for and secure permits from State pollution control agencies? What is the likely impact of this policy on jobs and employment? How will these new requirements affect the rate of inflation and consumer costs in the future? Just how growth limiting is the policy expected to be? Does a nondegradation stance conflict with efforts to develop new energy sources—especially coal and coal-derived fuels—in order to achieve energy independence for the United States as rapidly as possible?

These are just a few of the questions that I think need to be more adequately answered before a policy of prevention of significant deterioration is established in law. Because comprehensive supporting data of this sort is sadly lacking at present, I shall support amendments expected to be offered by Senators Moss and Scott to delete this section from the bill for the purpose of a thorough economic and energy-impact analysis by a knowledgeable panel of scientists and economists.

In addition to uncertainty about the economic consequences of this bill, I am greatly concerned about the powerful, preemptive role of the Federal Government, and, in particular, the Environmental Protection Agency, that is evident in the existing Clean Air Act and in this bill. I fully recognize that air and air pollutants are no respectors of State boundaries. However, I do not believe that is sufficient reason to dictate to each State what its growth policy should be and how much pollution control it must achieve. On the one hand, it may be desirable to establish realistic national goals for clean air, and, indeed, for a better quality environment in general. On the other hand, I believe it is also highly desirable to leave it primarily to governments closer to the people to precisely balance environmental benefits against pollution control costs in determining how clean the surrounding air should be. In particular, I contend that it should be princi-

pally a State and local government responsibility to decide how much pollution control is required of stationary pollution sources.

The Senate Public Works Committee has placed emphasis on the expanded States' role in these amendments to the Clean Air Act. I am thankful for this increased recognition of where the major implementation and enforcement responsibility should reside. However, let us not deceive the public. This bill charts new territory, especially in the nondegradation section. It represents a further shift in power from the private sector and from decentralized government toward a too powerful Federal bureaucracy. Throughout this bill, the Administrator of the Environmental Protection Agency is given veto power over State decisions. So, while S. 3219 may not completely centralize the execution of these new policies in the hands of a Federal agency, it still gives EPA far more preemptive power than I believe is necessary in order to protect and enhance clean air.

While I remain very critical of this legislation and of the Clean Air Act in these aforementioned respects, I recognize that there is substantial merit in particular parts of this bill. For instance, I strongly support the responsible, effective manner in which S. 3219 confronts the stratospheric ozone layer depletion problem. The bill mandates necessary research to thoroughly analyze the seriousness of this problem, the most likely causes of ozone deterioration—including the probable impact of halocarbons released from aerosols—and the most effective means of coping with the problem. If the evidence gathered from ongoing and planned research supports remedial action, the Administrator of the Environmental Protection Agency may restrict the manufacture and/or use of aerosols as he deems necessary.

I think this is a responsible approach, and it is a legitimate area of Federal concern, because of the scope of the problem. However, I do not support the "ban now—find out later" and "negative burden of proof" philosophy held by some of those who are, to be sure, sincerely concerned about this environmental issue. I will oppose any amendment which is based on such an emotional, misguided approach to this problem.

The committee has also considered the question of auto emissions controls and has attempted to reach a proper balance with respect to standards for controlling mobile source pollution. However, I regret that the committee did not accept President Ford's recommendations for a further delay in the most stringent standards, in favor of a 40-percent increase in fuel efficiency. The committee apparently feels that the American people can have it both ways, and that the final emission limitations should be both more stringent and achieved sooner than the Environmental Protection Agency and the President have recommended. While I recognize that auto emissions are the major air pollution problem in some urban areas, I think it is unfortunate that all purchasers of the new cars are made to pay an additional several hundred dollars for these pollution control devices and the excess fuel they may waste. Such costly equipment is an unnecessary addition to cars operated in most areas of the country, where major air pollution problems do not exist.

I also have some strong concerns regarding section 11 of S. 3219, which deals with industrial plant expansion in areas not yet meeting the established air quality standards. The Public Works Committee

has recognized the problem, although I do not believe section 11 provides the degree of flexibility needed. This Nation cannot afford to completely halt job-producing economic growth, even in areas with serious air pollution problems. We must continue to have a desirable balance between pollution clean-up and economic development objectives. That balance can be achieved, Mr. President, without completely sacrificing either of these worthy goals. I hope the members and staff of the Senate Public Works Committee will continue to work with the architects of the comparable House bill to find an optimum solution, which will allow desirable economic growth in air quality control regions and also protect public health.

Mr. HOLLINGS. As a cosponsor of the Moss amendment, I commend my colleague, Senator Moss, for proposing this amendment and I urge its overwhelming adoption by the Senate. My colleague from Utah has gotten to the heart of the matter, and our dilemma as responsible legislators, namely acting after all the facts are in, having a reasonable idea of what the ramifications of our actions will be. In some fronts the Moss amendment has been painted as antienvironmental, but we merely need to look at our colleague's Senate record to know that he certainly is not one who acts against the interests of consumers. Rather he has dedicated his career to protecting those interests and this particular amendment is consistent with his concerns. It is the only responsible position to take.

As we stand here debating the enactment of the Clean Air Act amendments, we are asked to make, in this case, a decision which will affect the economic and social well being of this country for decades to come. Section 6 of the committee bill, S. 3219, establishes a policy of nondeterioration in those areas of the Nation having air cleaner than that required under present national ambient air quality standards. The net effect of this proposal will be to restrict, and in some cases eliminate, development and expansion of industrial facilities even if the sources use the best available pollution control technology.

While the data presently available is too incomplete to list which areas will be affected in what way, there seems to be general agreement that the new policy would drastically curtail industrial expansion in the majority of States, especially those States which have energy resources that we will be calling upon to meet the goals of energy independence and those States which are predominantly rural in their makeup at this time.

There is no Member of the Senate who would contend that we should have a national policy which does not protect the health and welfare of our citizens. However, under section 109 of the existing Clean Air Act, the Environmental Protection Agency has the responsibility and the authority to set national ambient standards adequate to protect health and welfare plus an adequate margin of safety. It would appear to me that if this mandate were carried out, nondeterioration as contemplated in section 6 of S. 3219 would be unnecessary as a national goal. It is irresponsible to vote at this time for a policy of nondeterioration when we not only are confronted with the existing law which seems adequate to protect health and welfare, but in addition, have no comprehensive study of the economic effect that imposition of a nondeterioration policy would have.

The Moss amendment sets out to address the questions raised and the lack of reliable and adequate data on the subject of nondeterioration. Further, it sets out to identify the areas of the country that would be impacted by such a policy and to what extent they would be impacted.

The position of the National Governor's Conference has been that individual States should have the authority to set clean air goals higher than those set by existing law. Clearly, if a State chooses to promote or mandate pristine air or any quality of air higher than the national level, it is its prerogative to do so. However, it is a far different matter to impose on the whole Nation a substantially higher standard than that which currently exists.

There is no harm to be done by delaying our action for 1 year. If the nondeterioration policy has merit, the study will show it. If it requires modification in order to be implemented fairly and with the least impact on industrial development, we will find that out. The year lost to obtaining this information will be well spent and in the interim, industry can continue to achieve compliance with existing law. The record of the industry to date has been good. It has been estimated that industry has achieved 85 percent compliance in meeting the existing air quality standards, and in 1975 alone, they spent \$15 billion to meet air and water quality goals. Those are major strides, actions which should be encouraged and built upon in the interest of public health and welfare.

We have beaten the bushes in this country and abroad to encourage industrial development in South Carolina. At the same time, we enjoy relatively clean air and water, good beaches, beautiful mountains. However, the State still needs to increase its industrial base and I fear that a policy such as nondeterioration will prevent us from achieving that needed base. According to the testimony of the Sierra Club, Richard Lahn, advised the subcommittee that a paramount reason why 19 States joined the Sierra Club brief in encouraging the courts to adopt nondeterioration was to prevent industry from fleeing industrial areas to rural areas. To quote Mr. Lahn:

Aside from the environmental aspects described, perhaps the most important reason for preventing significant deterioration of air quality in clean air regions is the possible impact the lack of this provision might have on the economic well-being of our already industrialized urban centers. The incentives to develop in rural areas, draining the industrial development in urban areas was a major concern of the 19 States which filed friend of the court briefs before the Supreme Court.

That brief stated:

The health of the economies of urban-industrial regions is dependent upon industrial continuation and growth. It is in the best economic interest of these regions that sources remain in them and utilize the emission controls necessary to reduce pollution levels to the numerical limits of the standards.

The industrial achievements of this Nation are the main reason we enjoy the highest standard of living in the world. In the past we have not adequately recognized the impacts of this industrial development on our environment, and the existing air and water quality laws were designed to correct that situation. We are asked now to set a significantly different and stricter goal. Before we take that course, Senator Moss contends we should know the ramifications it bodes for the in-

dustries that are essential to economic recovery and energy independence. He is absolutely right.

There are really three amendments that all focus somewhat on the same area. One the Senator from Virginia (Mr. William L. Scott) has indicated he would like to have a vote on.

But since the Randolph amendment occupies the least change and mine is sort of in the middle, I think that mine ought to be tested first. If my amendment cannot carry, then, of course, the Randolph amendment would be the next thing up.

I had suggested that we could make an agreement or an arrangement of some sort and couple it with a time limit so we knew we could proceed and get this matter disposed of.

Mr. MUSKIE. I have never viewed the Randolph amendment as occupying any of the substantive ground occupied by the Scott amendment or the Moss amendment. All it is is a study amendment. There seems to be no dispute in the Senate as to the wisdom of an ongoing study. We have done it before.

So the Randolph amendment was offered yesterday, not as a competitor of the Moss or Scott amendments, but rather, as one of the items of business we could take care of when the leadership was pressing to get business done and more controversial amendments were not being offered.

Yesterday we took up the Domenici amendment, Senator Randolph had indicated willingness to bring his up, which he conceived to be noncontroversial. We had a couple of others lined up to come up.

Then Senator Moss, as is his prerogative, viewed the Randolph amendment as in some way prejudicing his position on his amendment.

That is what led us to the present stalemate.

Mr. ALLEN. As the Senator from Alabama stated, he favors the Moss amendment. But the Moss amendment, under the rulings of the Parliamentarian, is not in order as an amendment to the Randolph amendment.

That is the reason why the Senator from Alabama presents his amendment No. 2101, which does provide a halfway position between the Randolph amendment and the Moss amendment, and would be more acceptable than the Moss amendment.

If we can have a prior vote on the Moss amendment, the Senator from Alabama would not offer his amendment. But if the Moss amendment failed, and then the Randolph amendment again becomes the pending business, the Senator from Alabama would feel that he had the right to offer his amendment at that time.

Mr. MUSKIE. What I have been trying to work out, as a result of Senator Moss' suggestions as to the sequence, was a time frame within which the nondegradation issue can be disposed of in toto.

If we are going to be dragged on indefinitely with regard to the nondegradation issue, as the manager of the bill, I want to preserve my parliamentary freedom the same way other Senators like to preserve their parliamentary freedom. But if we can reach a time agreement, I would be happy as long as that sequence includes every nondegradation issue of which we are aware at the moment, including that of the Senator from Alabama.

Mr. ALLEN. My primary concern is that the Moss amendment have the opportunity to be presented to the Senate, and that it not be under-

cut by another amendment that might go just a little portion of the way that the Moss amendment goes, and, it having been adopted, the Moss amendment then would be more difficult of passage.

I would not have any objection to placing a time limit on the amendment to the Randolph amendment, but I feel I should have the right to offer amendments, and not rule out the possibility of offering amendments to the Randolph amendment if that becomes the pending business.

Mr. MUSKIE. We could vote on the Scott amendment first, the Moss amendment second, the Randolph amendment third, and then possibly have a vote on the Allen amendment if the parliamentary situation is such that the Randolph amendment is first among those three, a possible amendment by Senator Allen to amend the Randolph amendment.

Mr. ALLEN. Amendment or amendments.

I have no objection whatsoever to limiting the time with respect to these amendments, provided the sequence can be agreed to.

Mr. MUSKIE. I know, but you see it is a very difficult thing the Senator asks for, I know the kind of bargains the Senator likes to strike.

Mr. McCCLURE. Amendment 2101, which would seek to amend the Randolph amendment, does not directly suspend the provisions of the current law of the current EPA regulations; is that correct?

Mr. ALLEN. It would not suspend anything except this new section 6 which is section 110(g). It would suspend that for 1 year after the filing of the report to give an opportunity to amend the law to correspond with the Commission's recommendation. Then it has a second feature which says that none of these provisions would be enforced or implemented that contravene the recommendation of the Commission.

Mr. McCCLURE. But then the effect of the Allen amendment to the Randolph amendment, the way it relates to the bill reported by the committee, for a period of 1 year following the Commission's report, it would leave in effect during the period from now until that time the current provisions of law and EPA regulations under current provisions of law.

Mr. ALLEN. It has absolutely nothing to do with present law. It merely would suspend for 1 year the operation of this new section 6.

Mr. McCCLURE. That is right. So that the current law would be in effect from now until that time occurred.

Mr. ALLEN. That is correct.

Mr. Moss. I suggest as a possibility that we agree to take up the Scott amendment no later than 10 a.m., and that the Scott amendment be limited to 1 hour.

Mr. ALLEN. Scott amendment to what?

Mr. Moss. The Scott amendment to the Moss amendment. I have to put the Moss amendment up first. I shall ask that the Moss amendment be permitted by unanimous consent to be laid down, and then that the Scott amendment be in order on the Moss amendment with debate limited to 1 hour on the Scott amendment and then that the Moss amendment either as amended or not by the Scott amendment have 4 hours, at which time there would be a vote and thereafter that the Randolph amendment then be in order and have not to exceed 2 hours on the Randolph amendment at that point, and that amendments be in order to the Randolph amendment if and when it returns as the pending business.

Mr. ALLEN. What about amendments to the Moss amendment?

Mr. MOSS. Give an hour on any amendment to the Moss amendment.

Mr. ALLEN. I am glad to agree to that.

Mr. MUSKIE. There is some discussion of trying to set aside the pending matter and move onto the Bentsen amendment. Would that accord with the Senator's convenience?

Mr. ALLEN. I would have no objection. I should like to have permission to offer the next amendment to the Randolph amendment.

Mr. MUSKIE. That is, when we go back to the Randolph amendment?

Mr. ALLEN. Yes.

Earlier this morning I was discussing the general provisions of the Clean Air Act, and I stated that at the conclusion of my remarks I did plan to offer, amendment No. 2101. It would be an amendment to the amendment, now pending, of the Senator from West Virginia (Mr. Randolph), and I might state it would preserve the Randolph amendment and the concept of the Senator from West Virginia (Mr. Randolph) as to the setting up of a commission to study the effects of the nondegradation policy and, specifically, to study the implementation of section 6 of the bill, which is also an amendment to section 110 of the act.

But it does not disturb the Randolph conception of the mandate to the Commission for its study. It leaves that intact. As a matter of fact, it would greatly strengthen the role, the mission, and the function of the Commission set up by the Randolph amendment.

It occupies a middle position between the Randolph amendment, and the Moss amendment, that is, where both have to do with the setting up of a commission. Their mandates are different, but the amendment I will offer preserves the Randolph concept under the Randolph amendment. It would not deprive the distinguished chairman of the committee of being the author of the amendment that sets up the Commission to make this study.

Now, under the pending amendment, the Randolph amendment, a commission is set up to study the matter of the degradation of the environment and, specifically, to study the implementation of section 6 which, as I say, is a section that is added as section (G) of section 110 of the act.

Now, the Randolph commission would begin operation, I assume, when it comes into being. But while it is studying the question, section 6, the nondegradation section, becomes law and is subject to being implemented and enforced, so you would have an ongoing study of something that has already become law, and nothing that the Commission could do would prevent that law from being implemented.

The Commission could find that the implementation of the law would have serious economic effects on the economy of a particular State or particular locality; that it might have serious economic effects on the economy of the entire Nation. But if it makes that finding it could not change the law. The law would be there. So what is the use of passing a law and then setting up a commission to see whether the law is a wise law or not?

Mr. RANDOLPH. I only want the record to show that we have begun to realize in the Senate at long last—and I have advocated it for many years—that we have a constancy of oversight. After a law is enacted, agencies sometimes do not carry out what we believe is the intent of

the law. This is one of the reasons in recent years that we have an expanded oversight process here in the Senate, and I think that has been very helpful. We have adopted it in the Public Works Committee.

Many of the measures we adopted provide for complex regulation and the attainment of far-reaching goals. Therefore, we have established review commissions to examine the implementation of these laws and the propriety and attainability of the goals.

I mention this because, in a sense, this is what we are doing here. In connection with the control of water pollution, for example, we felt it was very necessary, and I offered the amendment which created a National Commission on Water Quality. The Commission was directed to study the effects of that law and to make recommendations as to the future of the water pollution control program. That, is what is proposed here.

Change is constantly underway, and it is impossible to write a law in hard and fast language which can carry over from one year to the next without review. In legislation of this kind, the bill managed here by the Senator from Maine (Mr. Muskie), we prescribe certain guidelines, regulations, and goals that keep in mind the energy, economic, and social problems of the United States, while we work to improve the quality of air for the American people.

So we continue to study and revise, at the same time we implement the law within the framework adopted by the Congress.

Mr. ALLEN. I think it is well to have an ongoing study. But, it seems to me, we are putting the cart before the horse when we pass the law and then provide in six different major categories of action required under that law that this Commission will be called on to examine the merits of such requirements.

It would be much better to set up the Commission, assign it the same mission of studying these various points, and then, on the basis of the recommendation of the Commission, act, and act on the basis that this, in effect, is a hearing by this Commission. It would make an investigation, and I am sure it would conduct hearings. But this is just like passing a bill without having hearings. You pass the law, you pass section 6, and then set up a commission and say, "you ladies and gentlemen, check this out and see if this law is a good law, and if it provides protection in these various areas."

The Moss amendment has a somewhat different concept.

I will not go into the different measures or mandates of those two commissions. I do not care which commission is set up and I am for the setting up of a commission to make a study.

But the Moss amendment seems to have a much more practical approach. This says, let us set up a commission, let us study nondegradation issues, let us see how proposed section 6 will operate on the economy, how it will operate on the environment, does it place too heavy a burden, can it be achieved.

Find these things out before we legislate.

The Moss amendment takes, as I understand it, this view.

Yes, let us set up a commission, let us study this matter, and after we have studied it, let us then legislate. Let us legislate on the basis of knowledge, of information gathered, on scientific information. Let us find out what the facts are, what the effects of this law will be, and then let us legislate.

I have two or three amendments. Amendment No. 2101 takes a midway position, between the Moss and the Randolph approaches.

I am for the Moss approach, if we can get an up and down vote on that amendment.

I thought we had an agreement pretty well worked out to allow the Moss amendment to be acted on by the Senate in an up and down vote, but negotiations for a unanimous-consent agreement did break down.

So that put us back to amendment No. 2101.

It is in two parts, because I have separate amendments to do separately what No. 2101 would do by itself.

The first part of 2101 would provide that section 6, or, wording it another way, subsection (g) of section 110, would not be enforced or implemented for 1 year after the filing of the report of the commission set up by the Randolph amendment.

This does not put the Moss commission approach into the Randolph amendment. It preserves the Randolph amendment on the setting up of the commission and the mandate and function of the commission.

But section 6 would go ahead and be subject to being enacted by the Senate. It would become law. But it would become law with the Randolph amendment as amended by No. 2101 that would say that none of the provisions of section 6 would be implemented for 1 year after the filing of the report. After that year, they could be implemented.

But why the year? That gives Congress an opportunity to study the report of the Commission set up by the Randolph amendment, see what is good and what is bad in putting into effect section 6, the non-degradation feature.

It gives the Congress an opportunity to get the benefit of the Commission's recommendation. It gives it a whole year, which is not too long in the legislative process, to study those recommendations and to enact a statute having in mind or drawing upon the recommendations of the Commission.

If the Congress does not pass anything, then section 6 would become operative at the end of the 1 year after the filing of the report.

The Moss amendment would knock out section 6.

The Randolph amendment would leave section 6 in, leave it in full force and effect while a study is being made.

Amendment No. 2101 would suspend the operation of section 6 for 1 year after the filing of the Commission's report to give the Congress an opportunity to study the report and get some benefit out of the study made by the Commission.

Mr. MORGAN. As I understand it, section 6 deals with nondegradation?

Mr. ALLEN. That is my understanding, yes.

Mr. MORGAN. And is it the Senator's understanding that this question arose because of a decision of one of the appellate courts which had disallowed deterioration of the air?

Mr. ALLEN. I feel that decision had some effect upon the thinking that went into this amendment. I do not know that it was a direct cause, but certainly it had some effect on the thinking.

Mr. MORGAN. It is my understanding now that under the present law, if the Congress fails to act at all, no new industry can come into my area that would degrade the air to any extent unless EPA promul-

gates some regulation that would permit that to take place. Is that the Senator's understanding of it?

Mr. ALLEN. I am not absolutely sure. As I understand section 4, it goes beyond the present regulations. It adds a new concept, a new regulation, beyond what the present law is.

Mr. MORGAN. I am not sure but what I may later agree with the Senator from Alabama and the Senator from Utah because many, many questions have arisen about this matter since it came to the floor.

I am new in the Senate, and this bill itself arose in a somewhat unusual way. We had a series of hearings over a period of a year or two and then the bill itself was drafted with no specific period on the particular provisions of the bill. Since the bill has been brought out I have been deluged with constituents who say this measure means this or this measure means something else.

My thought is that at least in this section there is some authority delegated to the State planning or regulatory agency, some discretion. But if we repeal this section or if we suspend it, would we not then leave ourselves completely at the mercy of the Federal bureaucracy rather than the State bureaucracy? That is the question which enters my mind.

Mr. ALLEN. If we knock section 6 out or if we suspend its operation, as my amendment would do, we would be under the present law, under which EPA has closed factories in my State. I did not agree with EPA in the action that it took. What the amendment of the Senator from Alabama would do would merely stay this section until the committee has an opportunity to report. The Congress has 1 year in which to avail itself of the recommendations of the Commission in shaping some legislation.

Mr. MORGAN. The Senator gives an illustration which concerns me. EPA here in Washington closes a factory in Alabama.

Mr. ALLEN. They threw 300 men out of work.

Mr. MORGAN. Under the present situation, the State of Alabama clean air commission or environmental protection agency, or whatever it is called, had no input into that situation at all. But under section 6 the State agency does have some input. I recall, for instance, having offered one amendment which would have restricted the use of best available technology, taking into consideration social, economic, and environmental factors. If we suspend section 6 are we not jumping out of the frying pan into the fire?

Mr. ALLEN. I think not. The Senator has made a more detailed study of this issue than has the Senator from Alabama. But I believe the option which the State has under section 6 is as to section 6 provisions. I would seriously doubt if it gives the State agencies control over existing regulations. I do not state that emphatically because I do not know for sure. But I believe the power given to the States has to do with the nondegradation features set up by section 6.

Mr. MUSKIE. I would like to comment on three points which appear to have arisen in the colloquy between the Senator from North Carolina and the Senator from Alabama.

In the first place, permits under the nondegradation provisions of this bill are issued by the States, not by EPA. We have made it a State administered program.

Second, the provisions of this bill are not more strict than EPA regulations; they are less strict. It is for that reason that testimony before the committee is replete with requests by industry to shape a congressional policy. The Senator from North Carolina referred to the way the provision came into the bill. It came into the bill because we were urged by industrial sources and by environmental sources to direct ourselves to this issue. The issue was in the process of being defined by the courts. That was fine with me. We just did not reach out and grab a handful of trouble for ourselves because we were looking for trouble. We took up the issue because we were urged to do so by people on both sides, industry and environmentalists.

The third point I would make is that the nondegradation provisions cannot be used to close factories. All the nondegradation provisions do is protect areas that are not developed from the consequences of irresponsible, unrestricted, and unrestrained growth. It does not apply to existing industry. It cannot be used to close existing industry doors.

Those three points, it seems to me, had to be clarified.

Mr. ALLEN. I want to answer one or two things the Senator has spoken of. The Senator from Alabama did not say that the plant in Alabama was closed under the nondegradation feature, which has not yet been enacted into law. What the Senator from Alabama said was that under existing law they did close a factory in Alabama only recently. If this section 6 and this bill in general places less of a burden on industry, it seems strange to the Senator from Alabama that industry seems to be making an all-out fight against section 6.

I did not quite complete the analysis of my amendment, No. 2101.

On the second feature of this amendment, it is possible I will offer only one part of the amendment, one that I might possibly not insist upon. I indicated that by filing a different amendment knocking out the second part as to section 6, or, stated another way, subsection (G) of section 110 of the act.

If the commission was able to point out that the provisions of this section 6 were so burdensome or nonattainable they would not be implemented or enforced, that would provide some basis or reason for having the commission if its recommendation will have some force and effect.

#### UNANIMOUS-CONSENT AGREEMENT

Mr. MUSKIE. I ask unanimous consent that we turn now to the Bentsen amendment, to be followed by the Baker amendment, both on a different subject than the one which is pending.

Mr. McCLURE. I wonder if we can have a better identification of the two amendments the Senator has referred to.

Mr. BENTSEN. It is printed amendment No. 1614.

Mr. McCLURE. And the Baker amendment?

Mr. BAKER. The Baker amendment will be a perfecting amendment to the Bentsen amendment. It is printed amendment No. 1586.

#### AMENDMENT NO. 1614

Mr. BENTSEN. Mr. President, I call up my amendment No. 1614 to S. 3219.

The assistant legislative clerk read as follows:

The Senator from Texas (Mr. Bentsen) proposes an amendment numbered 1614: On page 70, beginning with line 13, strike out all through line 5 on page 73, and insert new language.

Mr. Bentsen's amendment (No. 1614) is as follows:

On page 70, beginning with line 13, strike out all through line 5 on page 73, and insert the following:

"SEC. 27. (a) Section 207(b) (2) of the Clean Air Act (42 U.S.C. 1857f-5a(b)) is amended by adding the following at the end thereof: 'No such warranty shall be invalid on the basis of any part used in the maintenance or repair of a vehicle or engine if such part was certified as provided under subsection (a) (2).'

"(b) Section 207(a) of such Act is amended by inserting '(1)' after '(a)' and by adding the following new paragraph at the end thereof:

"(2) In the case of a motor vehicle part or motor vehicle engine part, the manufacturer of such part may certify that use of such part not result in a failure of the vehicle or engine to comply with emission standards promulgated under section 202. Such certification shall be made only under such regulations as may be promulgated by the Administrator to carry out the purposes of subsection (b). The Administrator shall promulgate such regulations no later than two years following the date of enactment of this paragraph.'

"(c) (1) Section 207(b) of such Act is amended by striking out 'its useful life (as determined under section 202(d))' in each place it appears and inserting in lieu thereof 'a period of eighteen months or eighteen thousand miles (or the equivalent), whichever first occurs'.

"(2) Section 207 of such Act is amended by adding the following new subsection at the end thereof:

"(g) In lieu of the eighteen-month of eighteen-thousand-mile period of use referred to in subsection (b) there shall be substituted "the useful life of the vehicle or engine (as determined under section 202 (d))" if the Federal Trade Commission finds under section 27(d) of the Clean Air Act Amendments of 1976 that no significant anticompetitive effects result from the application of such warranty for such useful life.'

"(d) The Federal Trade Commission shall undertake a study to determine whether or not any anticompetitive effects would result from any warranty required to be provided pursuant to section 207(b) of the Clean Air Act if such warranty applied for the useful life (as determined under section 202(d) of such Act) of vehicles and engines to which such warranty applies in lieu of the eighteen-month or eighteen-thousand-mile period specified in such section 207(b). Such study shall include public hearings. Such study shall include an analysis of any measures implemented by the Administrator to prevent or diminish such anticompetitive effects and shall include a finding with respect to whether or not a significant anticompetitive effect would nevertheless result from such warranty if the warranty applied for such useful life. Such study shall be undertaken primarily by the Bureau of Competition in consultation with the Bureau of Consumer Affairs.

"(e) (1) Section 207(c) (3) of such Act is amended by inserting after the first sentence thereof the following 'In no event and under no circumstances shall a manufacturer (in written instructions or otherwise), specify, require, or designate the use of any proprietary or brand name automotive part, material, or substance for purposes of this paragraph. For such purposes, the manufacturer may only specify performance standards or engineering specifications or the use of parts which have been certified as provided in subsection (a) (2) or parts meeting such standards or specifications. No manufacturer may directly or indirectly specify for such purposes that maintenance, replacement, or repair may only be performed by franchised dealer or approved automotive service establishments. The manufacturer shall provide in boldface type on the first page of the written maintenance instructions notice that maintenance of the emission control devices and systems may be performed by any automotive repair establishment or any individual using any automotive part which meets the performance and engineering specifications of the manufacturer or which has been certified as provided in subsection (a) (2).'

"(f) Section 207(c) of such Act is amended by adding at the end thereof the following new paragraph:

"(4) In the case of any nonconformity of any vehicle or engine required to be remedied at the expense of the manufacturer under this subsection, the owner of

such vehicle or engine shall be, under regulations promulgated by the Administrator, compensated by the manufacturer for any amount expended by him with respect to such nonconformity before the date on which such nonconformity is required to be remedied under this subsection."

On page 73, line 6, strike out "SEC. 30" and insert "SEC. 28".

Renumber sections 31 through 38 as sections 29 through 36, respectively.

On page 88, beginning with line 15, strike out all through line 9 on page 89.

On page 89, line 10, strike out "SEC. 40" and insert "SEC. 37".

Renumber section 41 as section 38.

Mr. BENTSEN. Mr. President, this is my amendment to reduce the 5-year/50,000-mile performance warranty to 18 months or 18,000 miles, whichever comes first. [Sec. 207(a)(2)]

The immediate reaction to that is, "Why would you do that to the consumer?"

The facts are, we are trying to do something to protect consumers.

In addition, I am concerned about the fact that we have some 400,000 independent repair shops in this country, 1,700 independent parts manufacturers, and 22,000 independent parts distributors, accounting for 80 to 85 percent of all the work performed in garages throughout this country, and I think that small, independent businessman ought to be able to stay in the business. I think when we try to tie on a 5-year/50,000-mile performance warranty, in effect we close their doors.

In no way am I doing away with the production warranty. We have two warranties involved. One of them is a 5-year/50,000-mile production warranty. The other is a 5-year/50,000-mile performance warranty.

I want to keep the obligation, the responsibility, and the burden on the automobile manufacturers in this country to produce a car that will have a production warranty of 5 years and 50,000 miles, with all the ways to implement that, and see that it is done by forcing recalls when they do not meet those production standards.

But when it gets to the performance warranty, that is quite another thing. If you leave that 5-year/50,000-mile performance warranty in there—remember, performance, not production—you are going to build that right into the cost of the automobile. In addition to that, you are going to find these people, when the car fails on performance, going back to the franchised dealers, so that you are really wiping out the small independent car mechanic in this country.

I am pleased that 14 Senators have joined me in cosponsoring this amendment.

The 1970 Clean Air Act requires auto manufacturers to provide two warranties on their emission control systems. The first is the so-called section 207(a) "production" warranty which requires the manufacturer to do two things: first, to "design, build and equip" his vehicles to meet the requisite standards at the time of sale; and second, to build them free of defects in materials and workmanship which would cause them to fail to conform with the standards during the useful life of the vehicle, a period which is defined as 5 years or 50,000 miles, whichever occurs first. The production warranty thus requires the auto manufacturers to equip new cars with emission control systems which work at the time of sale and which are sufficiently durable to insure that the car will meet the standards during its useful life.

That I want to retain. I want that obligation and responsibility to stay. I believe it is absolutely essential to the purposes of the act, and I do not propose a change in any way on that.

My concern, however, is with the second warranty mandated by the act, the so-called performance warranty of section 207(b). The performance warranty is not now being implemented because a short, reliable emissions test has not been developed, but once it is, this second warranty would work as follows: Should the emission control system fail while in actual use, the performance warranty obligation would require the manufacturer to pay for the cost of repair, provided the carowner could demonstrate that he had properly maintained and operated his vehicle. The requirement of proper maintenance is a rather big qualification, however, and I would like to briefly discuss its ramifications.

During testimony before the House Small Business Committee in 1974, the auto manufacturers made clear what they intended "proper" maintenance to mean. To claim coverage under the performance warranty, the carowner would have to do three things: First, he would have to demonstrate that he had routine service work—tuneups, oil changes, and so forth—performed according to the schedule outlined in the owner's manual; second, that he would have to use original equipment manufacturer's parts—the brand made and marketed by the auto manufacturers—or their certified equivalents; and third, that he would have to insure their proper installation.

Particularly on that latter requirement, the one dealing with proper installation of the parts, the actual quality of the work performed, the final determination as to whether the vehicle had been properly maintained would rest with the manufacturer and his representative, the franchised dealer.

During those hearings, the manufacturers confirmed what many others had long feared—that the potential under this warranty for a tie-in of the owner to the auto manufacturer was real, that the likely result of its implementation would be a significant shift of automotive service work to the auto manufacturers through their franchised dealers, and that hundreds of thousands of small, independent repair shops and the industries which service them would be placed at a decided competitive disadvantage.

The House Small Business Committee concluded that the 5-year/50,000-mile performance warranty was unnecessary, anticonsumer and anticompetitive.

Again, remember it is the performance warranty we are talking about, not the production warranty. After carefully reviewing this issue, I have come to agree, and I would like to take this opportunity to list the factors which support these three conclusions.

The 5-year/50,000-mile performance is "unnecessary" because first, under the already mentioned production warranty, the manufacturer is already held liable to produce an emissions control system which works at the time of sale and remains effective for the useful life of the vehicle; second, under the production-line test of section 206(b) and which these 1976 amendments require to be initiated during model year 1977, EPA will be able to insure that those vehicles actually do meet the standards as they leave the assembly line; and

No. 3, under the recall provision that I referred to earlier in my comments, that is section 207(c), the agency is required to investigate reports that a particular vehicle or engine model is not complying with the standards during actual use and to require their recall for repair if the manufacturer is at fault.

The combination of the 207(a) production warranty and the enforcement mechanisms would thus seem to assign sufficient legal and financial obligation for the manufacturers to produce a durable, effective emission control system.

If they do not do it, they are going to pay the penalties for it through the recall process.

The 5-year/50,000-mile performance warranty would also appear contrary to the best interests of the car owning public because:

One, it will increase the purchase price of a new car by \$160 to \$260 as the anticipated expenses of the manufacturers' honoring this warranty obligation are passed on to the carowner. You are going to have to pay for this at one time or the other, but you are running the risk of tying them really to franchised dealers in doing this and you are going to deny the small independent garage owner his normal business.

This initial cost will be paid by all new car purchasers, whether or not coverage under the performance warranty is ever sought.

It will, however, not provide blanket coverage. If the carowner cannot demonstrate that he has properly maintained his vehicle, he will not qualify for compensation under the performance warranty. In that event, he will be out the sum he paid for the warranty at the time of purchase plus the cost of bringing the system back into repair, and that is a rather costly form of double payment that the carowners of this country are going to face.

It will, therefore, likely restrict the carowner's service options, because having his vehicle serviced at the franchised dealer is the only means of insuring that he does not invalidate this performance warranty. He is taking a risk if he goes to the independent dealer after this kind of legislation is on the books. So why should he take the risk? Just let the independent dealer close his door.

It might well result in higher service costs to the carowner. Americans today overwhelmingly choose to have their vehicles repaired and serviced by the independent service sector, or some of them want to do that work themselves. Some of them have a knack for the work of automobile repair and like to do it. With the inflated costs we are running into in sectors of the economy today, some of them find that is the way to meet their budget. Convenience, quality of work, and lower costs are, I believe, the major reasons for these service preferences.

If public policy as embodied in a mandated 5-year/50,000-mile performance warranty causes a major shift in service work to the auto manufacturers and their franchised dealers, the carowner can be expected to pay more for that work, both at the time it is performed and over the longer term as a number of the independents who provide real competition in the aftermarket go out of business.

I cannot believe that any of those developments will be in the best interests of the carowners of this country.

The latter point suggests the third conclusion of the House Small Business Committee, and the one I want to stress in concluding my remarks. The 5-year/50,000-mile performance warranty will be highly detrimental to continued healthy competition within the automotive aftermarket service industry.

Let us make this point, because it is of utmost importance. For most of us, the words "automotive emissions control" have been synonymous

since 1975 with a single device—the catalytic converter. In placing a legal requirement on the auto manufacturers to control vehicular emissions, we have wanted them to build and utilize devices which are effective and durable. And we must insist upon that.

However, we should also realize that automotive emissions control actually involves at least several score of interrelated parts, all of which must be working properly for the desired pollution reductions to occur.

I recall at one time EPA suggested that as many as 400 auto parts could actually affect the performance of a vehicle's emissions control system. I am not sure but what that is not something of an exaggeration. Even so, there is a great number involved here.

I think we can with reasonable assurance assume that the following are involved: Air cleaners, oil filters, drivebelts, motor oil, carburetors, distributors, hoses, manifolds, PCV valves, chokes, exhaust gas recirculation systems, evaporation control systems, engine coolants, vacuum fittings, intake and exhaust valves, ignition timing and advance systems, wiring, and the fuel pump, just to name a few.

Emissions control on vehicles should thus be properly thought of as a system rather than as a single device.

And that suggests just how important proper maintenance of the vehicle is—not just of the emissions control device, but of the entire combustion system. What immediately comes to mind is the tuneup, one of the most elemental but nevertheless important repairs needed for the vehicle.

The performance warranty is really conditioned upon the proper performance of tuneups and other routine service work. The warranty would not pay for the tuneup; the warranty would provide subsequent coverage only if the tuneup were performed properly, that is, according to the schedule outlined in the owner's manual, with approved parts which were satisfactorily installed.

The owner must demonstrate each of these things. If he cannot, the 5-year/50,000-mile performance warranty has been invalidated, and he must pay for any needed repairs himself.

I want to repeat this point because of its importance. If the emissions system fails the test, the cause will in many instances be that the vehicle has not been properly and recently tuned. No compensation could be obtained under the performance warranty—whether it be 5 years/50,000 miles or 18 months/18,000 miles—because the car would not have been properly maintained.

We know one of the reasons why we must use unleaded gasoline now on new cars is that if you run leaded gasoline through that car and that engine, you are going to render your catalytic converter ineffective.

We should also know that the functioning of numerous other car parts also directly affects its performance. For example, if the carburetor is not properly adjusted, unburned gasoline may be flowing through the engine and into the converter, or if the timing is not properly set, full combustion may not be occurring and the exhaust stream may be at a lower temperature than normal.

The catalyst is designed to reduce the emissions from the engine's exhaust, but is optimally efficient only when that exhaust stream is within a certain range of chemical composition and temperature. Should either differ substantially from the norm, what the system was designed to handle, then the catalyst's effectiveness will decline and

the likelihood of that engine meeting its emission test is substantially lessened.

I think we should also ask ourselves, however, what might happen if the owner can demonstrate that he has had the car tuned on schedule and that acceptable parts have been used but the franchised dealer determines that the work was not satisfactorily done. We are going to have some really intense negotiations between that car owner and dealer. There is the question as to whether the dealer eventually decides to have the work done at company expense in the hope of not losing a customer, and it may be someone who is traveling when the problem occurs, who may not be a local customer, where the dealer never expects to see him back again.

The point will be made that all the trouble could have been avoided if the carowner had allowed the dealer to service the vehicle in the first place. If you do not think that is not going to make an impression on that carowner, you are mistaken. He is going to decide that the safe way for him to do it is always to go to the franchised dealer. The only way to insure that the performance warranty has not been invalidated is to have the work done by that franchised dealer.

The franchised dealer fulfills a very useful role in our economy. He contributes in a major way to the efficient and effective distribution of our automobiles. But today, again, we have hundreds of thousands of independent dealers, and there is a place for each. One should not be put out of business at the expense of the other.

Section 29 of S. 3219 attempts to address this problem by a simple prohibition on conditioning the performance warranty to the use of certain brands of parts and certain brands of service. The committee recognized this problem, so they tried to forestall it and overcome it. They talk about the parts and the repair shops of the auto manufacturers. But such a prohibition does not and cannot counter the subtle pressure that the only foolproof means of guaranteeing continued coverage under the performance warranty is to have that vehicle routinely serviced by the franchised dealer.

What will the effect of this subtle pressure be on the aftermarket that sector of our economy which earns its living servicing automobiles?

Let me emphasize how many folks are involved—the small businessmen in this country. Today, there are some 400,000 independent repair shops that may well be put out of business unless we pass my amendment; 1,700 independent parts manufacturers; 22,000 independent parts distributors—accounting for 80 percent to 85 percent of all the service work performed in garages throughout this country.

The tuneup and the assorted other routine repairs constitute a vital part of their business. In fact, the average service station derives as much as one-third of its earnings from this service work.

Implementation of the 5-year/50,000-mile performance warranty can be expected to divert a substantial share of the service work away from these independents, with the result that the auto manufacturers at last are able to win a significant share of the service market.

The charge has been made that the automobile manufacturers will be the major beneficiaries of my amendment. Nothing could be further from the truth. I believe that they will be the only beneficiaries if we permit the 5-year/50,000-mile performance warranty to be implemented. Retail sales and services are the sector of the automobile

industry which is truly competitive. That is perhaps its most healthy characteristic and one which public policy should encourage.

Today almost 50 percent of the market in manufacturing is held by one company, and that company is doing a good job of it; but I do not see any reason for it or all of the manufacturers to have 50 percent of the service market in addition. That is what would result unless we take action to correct what has been done here on a 5-year/50,000-mile performance warranty. I believe this to be of great importance, and that is why I have offered my amendment.

I am pleased to report that this amendment already has been approved by the House Commerce Committee and that it appears in the House bill. I hope that the Senate, likewise, will approve it.

Mr. MUSKIE. I wish to make this point with reference to the Senator's amendment. In the first place, the aftermarket industry now controls 80 percent to 85 percent of the business which is involved. It does that notwithstanding the fact that the modern automobile has many complex systems: the ignition system, the transmission system, the brake system, and the air conditioning system. The automobile has become more and more complex, tempting one to the conclusion that, more and more, the consumer would turn to the manufacturer to correct any deficiencies or difficulties that developed in those complex systems.

Yet, according to the sponsor of this amendment, the aftermarket industry now has 80 percent to 85 percent of the business with which it is dealing. He argues that this performance warranty would have an effect different from the complexity of all these other systems, that this would turn the consumer away from the aftermarket industry to the franchised dealer. I think that is quite a tough case to make.

Second, this performance warranty has been on the books for 5 years, and the aftermarket industry has flourished in that 5-year period.

Why do we need a performance warranty? If we have learned anything in the 13 years that we have tried to prod the automobile industry to clean up automobiles emissions, it is that the industry will not do anything voluntarily. It will not do anything that public policy does not require. The deadline for achieving standards was one such public mandate that Congress overwhelmingly approved: and although we postponed the deadlines, we have stuck to the mandate because we all know that.

In addition, the performance warranty is a way of making the manufacturer stick to his commitment as mandated by public policy.

At the rear of the room is a chart. What does that chart tell us? It tells us that, notwithstanding the standards required by the 1970 law, the automobiles manufactured since 1967, have not actually met those standards in use.

For example, with respect to hydrocarbons, the black line indicates what the current law requires in terms of standards. The red line indicates that actual inuse performance. It is clear that the cars that the manufacturers put on the road do not meet the standards for which they are certified when they ask EPA to clear their models for the next production year. That is the gap.

The second one indicates the same story on carbon monoxide, which is the most deadly of these pollutants. Again, the black line indicates what the current law requires. The black line indicates the standards for which the automobiles were certified by EPA, and the red line

indicates how they actually performed on the road with emissions far in excess of the standard.

I remind Members of the Senate that the standard is set by public health requirements; so that these automobiles that have been certified under public law since 1967, in actual use, have been violating public health requirements.

What is the answer to that? The do-it-yourself garage mechanic? Or do you put the burden on the automobile manufacturers? The present performance warranty requirement is that the car shall be manufactured to meet those standards for 50,000 miles. I ask this question: If we change that requirement from 50,000 to 18,000 miles, what is your guess as to what the manufacturers response will be? What is your guess, given the record of the last 13 years? You know very well that the manufacturers will tailor their automobiles to meet an 18,000 mile performance standard and then leave it to the consumer and his mechanic to meet whatever penalties are thereafter imposed upon the consumer because the manufacturer has cut back on his own effort. It is as simple as that.

Do the sponsors of this amendment really believe that if the standard is dropped from 50,000 to 18,000 miles, the manufacturer is going to feel the same pressure to upgrade the performance of his cars that he does with a 50,000-mile warranty? Nobody can make that argument with a straight face.

So, this amendment would undermine the objective of the Clean Air Act. The existing warranty helps to protect public health by making the manufacturer responsible for building cars to meet the standard for 50,000 miles. This eliminates any incentive for the manufacturer to design and build cars that meet the standard beyond 18,000 miles. It shifts the burden and the expense of repairing a faulty emission control system from the manufacturer to the owner of the car.

As the Senator from Texas has pointed out, an adequate in-use test has not yet been perfected, but when it is, if the automobile of any individual owner fails to meet the public standards, that owner will be harassed and prodded by whatever enforcement agency the State creates to do whatever that State agency deems necessary to put that car into condition to meet that standard.

With respect to safety, we have put into public law policies which require the manufacturer to recall automobiles that do not meet safety standards, and we have seen story after story of hundreds of thousands of cars being recalled by manufacturers because they did not meet the safety standards.

Let us project an in-use test for emission standards. Poor Joe Blow buys a car, puts it on the road, runs it for 18,000 miles, then the emission controls fail and the in-use test identifies the failure. Would the manufacturer be required to repair the car under the Bentsen amendment? Of course not. That burden will fall on the consumer.

It does not matter what it cost, it does not matter whether or not the engine was basically so far off standard that it could not be restored to the standard. The owner would be stuck with it. We take the position that the manufacturer has the obligation.

The Senator from Texas is concerned that the performance warranty would drive the consumer into the hands of the franchised dealer. It

would have that effect only if the manufacturer has a way of intimidating the consumer to take that course of action. If the manufacturer cannot intimidate the consumer into going to the franchised dealer, what reason in heaven would push the consumer in that direction? I am one consumer who does not go to a franchised dealer if I can avoid it, and if I have a good mechanic who can deal with my car himself. If the manufacturer cannot intimidate the consumer into going to the franchised dealer, he is not going to go. It is with that in mind that the committee, in the pending bill, wrote in these provisions:

The first provision requires all owners' manuals to contain instructions that maintenance does not have to be performed by the dealer or with the manufacturer's own parts. [Sec. 207(3)(B)]

Second, the bill makes illegal—makes illegal—any warranty provision that attempts to tie coverage to the use of the dealer's service and parts. [Sec. 207(3)(B)]

Third, the bill provides for the establishment of a program which will enable aftermarket parts manufacturers to certify that their parts perform as well as the auto manufacturers' parts, and the auto manufacturers have no role in approving such certification. [Sec. 207(B)(2)]

Finally, the bill provides for a Federal Trade Commission study of any anticompetitive effect that might still exist, notwithstanding these provisions.

So, what have we done in this bill? We have said to the automobile aftermarket parts dealers and manufacturers, "We understand that you applaud the objectives of the Clean Air Act and that you would want your parts to be consistent with the objectives of the Clean Air Act, so we shall make provision for certification of your parts so that you can consistently support your own objective of implementing the Clean Air Act."

Now, if they do not want to meet the objectives of the Clean Air Act, then they will object to that certification procedure. But if they mean what they say, that they subscribe to the objectives of the Clean Air Act, then the certification procedure would be a service to them and would eliminate whatever pressure there may be in that respect on the consumer to go to the franchised dealer.

The other two provisions that we have written into the law insure that the manufacturer cannot, through the written provisions of the warranty or through any arrangement with his dealer, create the impression, or even mandate, that the consumer has to go back to the dealer in order to get service, or in order to get parts replacements if they relate to emission control.

These provisions were put into the bill after careful study and analysis, and I think they eliminate any potential for the manufacturer to so intimidate the consumer that the consumer will be driven into the arms of the franchised dealer.

An amendment to be offered by the distinguished Senator from Tennessee (Mr. Baker), I think, will add to these safeguards in an important way and he will present that as a substitute or perfecting amendment to the Bentsen amendment, as I understand it.

I have undertaken to restrict myself to the explanation of the committee amendments. But the heart of the difference between my good friend from Texas and myself is reflected in that chart, the problem of

assuring that 110 million automobiles in this country that are on the road meet the standards required by law for their useful life.

From the first time that I wrote a law dealing with auto emissions, we have always conceded that the big problem was not the new car coming off the line but the tens of millions of used cars on the road, because if the new car coming off the line was not adequately engineered and built, it would add to the family of 110 million used cars that do not, and likely cannot in their lifetime, meet those standards. Those curves show that since 1967 that conclusion has been right, and borne out by the record.

A new car becomes an old car the minute it changes hands, and unless it has been engineered up to that point so that it would meet those standards during its useful life, it is simply going to continue that red curve into the indefinite future.

The actual life of a car is more than 50,000 miles. We all know that. It approaches 100,000 miles, I think, increasingly, but it was our feeling that a 50,000-mile warranty would put sufficient pressure on the manufacturers to meet the standards so that if they met them for 50,000 miles, the chances were that the standards would be met pretty closely for the car during all of its useful life, even if it extended beyond 50,000 miles.

Well, 18,000 miles falls so far short of the actual useful life of an automobile that if the Bentsen amendment is adopted, for all practical purposes enforcement of the clean air standards will be in the hands of the individual consumer in this country, and there is ample evidence on the record that many consumers resist these standards; that they have asked their mechanics to disengage air pollution controls on their cars; that they have disconnected air pollution controls on their cars, and that their mechanics have worked with them to do so.

I can understand their frustration, but their frustration stems directly from the fact that the manufacturers have picked the wrong technology to meet those standards, and because they failed to use the right technology, you have had the performance shown on those charts. The only way you are going to force the manufacturers to move toward the clean air technology is to keep the pressure on and not relax it in the way the Bentsen amendment would propose. That would relax the pressure; it would intensify that problem. It would delay the day when the 100 million used car population of this country begins to come close to what the public health requires in terms of clean air performance.

Mr. BUCKLEY. I thank my friend from Maine. He has stated the case so well in opposition to Senator Bentsen's amendment that I find it very hard to add to it. I shall try to approach it from a different view.

What we are coming down to is really a question of durability. We have to have some kind of mechanism to make sure that the auto manufacturers engineer into their products durability, which will carry forward, with some degree of reliance throughout the useful life of the automobile. I can think of no device other than this guarantee, the 5-year, 50,000-mile warranty, better suited to do that.

I believe the arguments utilized by the Senator from Maine, addressed to the questions of the effects on the after market, are persuasive. I share the sentiments of the Senator from Texas (Mr. Bentsen) about the need to protect that after market and the independent

dealers. I utilize them and shall continue to utilize them whether or not this amendment is enacted. But I would like to focus on one matter that was touched on by the Senator from Texas in his citation of a report issued by the House Committee on Small Business.

I totally disagree with the conclusions he has drawn from that study. The hearings upon which the House committee made its findings demonstrated no drift toward lack of competition as a result of the performance warranty, particularly in view of such legislation as the Magnuson-Moss Act.

I would like to examine, for the purpose of clarifying the record, some of the testimony given before that House subcommittee.

Mr. D. A. Jensen is the director of Ford Motor Co.'s auto emissions office. He testified as follows:

Ford believes that any part which meets the original component performance specifications, regardless of its source, may be used in the maintenance and repair of Ford vehicles without voiding the warranty coverage on that vehicle. We believe that the use of performance, as opposed to design, specifications for purposes of determining component equivalency is highly desirable.

To assist in resolving this problem, the bill contains language establishing a parts certification process.

Another witness was Mr. Edmund Doyle, vice president and general manager for parts and service of Chrysler Corp. This is what he said in his testimony:

In order to keep the warranty in effect, an owner must, among other things, maintain his vehicle in accordance with certain specified instructions issued by Chrysler, a copy of which is also attached. Among the required maintenance services are the following:

- (1) Engine oil and filter changes;
- (2) Service of the carburetor choke shaft, fast idle cam, and pivot pin;
- (3) Maintaining or replacement of drive belts;
- (4) Cleaning and replacement of carburetor air filters;
- (5) Service of the engine idle speed, ignition timing and idle;
- (6) Service and replacement of the PCV valve;
- (7) Replacement of the filter element (in the vapor storage cannister);
- (8) Service of the crankcase inlet air cleaner, the exhaust gas recirculation system and the choke;
- (9) Spark plug replacement;
- (10) Inspection of the orifice spark advance control valve;
- (11) Replacement of the fuel filter; and
- (12) Service EGR system.

An owner is free to have all of the above-referred to maintenance requirements performed at any servicing agency of his choice and none need be performed at a Chrysler Motors Corp. dealership. Further, any replacement filter, spark plug, belt, valve, et cetera, necessary as a result of the performance of this required maintenance need not be one manufactured or sold by Chrysler Motors Corp.

That to me does not sound very dangerous to competition.

Mr. John C. Bates, director of the service section at the other big automaker—General Motors—made this observation:

Third, the existing maintenance instructions, if continued unchanged, would not have the effect of invalidating a section 207(b) performance warranty for a GM car on which nongenuine GM parts should be installed.

That was followed by the testimony of Mr. Jack Whitaker, president of Whitaker Cable Corp. He testified as follows:

If we can establish that the use of independent aftermarket parts and services is "reasonable maintenance" and if we can administratively induce vehicle manufacturers not to persuade or coerce the consumer into going through only their

own market channels, and if we can establish that aftermarket parts are equivalent in the critical areas, which we believe they clearly are, we think we will have dealt with the prime area of concern; namely, the reasonable maintenance area.

Mr. Whitaker's statement continues:

So the statement that has been made earlier that the consumer will not pay for something that he can get free, is really beside the point. The heart of the problem, not the entire problem, but the heart of the problem is what constitutes reasonable maintenance, and not what services are performed without charge under the warranty.

In testimony before the House, Mr. Bertram M. Kaplan, president of Kastar, Inc., testified as follows:

It is a continuing problem which must be watched closely by EPA. We feel that an affirmative statement to the effect that the warranty will be maintained if the prescribed work is done properly regardless of who does it, is necessary.

When asked about the same point, Volkswagen responded as follows:

Proper maintenance in accordance with the manufacturer's recommendations and the use of proper parts by an independent service center will not affect the rights of the car owner under the warranty for new Volkswagen vehicles emission control system.

A final viewpoint was presented by Mr. Alan G. Kirk II, who was then Assistant Administrator for Enforcement and General Counsel of EPA. He said:

In conclusion, I wish to emphasize that the agency opposes any weakening of the in-use enforcement provision of the Clean Air Act. We feel that these provisions must remain and must be vigorously enforced, if the clean air goals of the act are to be met. With no sanctions after sale, there would be little incentive for manufacturers to design and build vehicles capable of meeting standards for the life of the vehicle as defined by the act. The warranty and recall provisions provide this incentive. They also provide an incentive to purchasers to comply with the maintenance instructions, thereby increasing the prospects of in-use compliance. We believe that these provisions are essential to achieve the goals of the act and that adequate safeguards can be developed to protect the aftermarket from undesirable side effects of these provisions.

I believe that the criteria I have cited from Mr. Jack Whitaker, regarding the safeguards to make sure the major automobile producers do not insist on the utilization of their franchise dealers, have, in fact, been met by the legislation we have before us, and by the provisions of the Magnuson-Moss Act.

I believe that further safeguards are incorporated in the amendment that will be offered by the Senator from Tennessee (Mr. Baker), an amendment that I have cosponsored along with the Senator from Vermont (Mr. Stafford).

I believe that we have those measures, those protections, that are essential to the protection of competition in the aftermarket.

I urge that the amendment offered by Senator Bentsen be rejected.

Mr. STAFFORD. I wish to state my strong opposition to this amendment, which eliminates any effective clean-air warranty protection for the consumer. [Sec. 207(c)] Rather than promoting competition in the aftermarket, or reduce the consumer costs, this amendment will have the effect of relieving the auto industry of many of its responsibilities under the present act.

I believe that the real issue surrounding the clean-air warranty is how best to assure the public that the auto manufacturers are building and designing cars that actually meet a particular pollution standard

over a reasonable period of time. Reducing the length of the warranty from 50,000 miles to 18,000 miles will enable the auto manufacturers to ignore development of trouble-free pollution control systems, which would both protect the consumer and protect the manufacturer against potential warranty claims. On this point, EPA Administrator Train wrote Senator Buckley on July 20, stating:

I must conclude that our ability to elicit the much-needed improvement in durability of emission controls will be impaired if the term of the warranty is reduced.

Senator Bentsen argues that the public will still be protected by the certification procedures. This is what General Motors said on that point last year:

The deterioration factors obtained from certification testing will seldom represent the actual field use of vehicle by car owners. The reasons for this are many but one is the fact that durability cars are driven night and day in order to complete the necessary certification requirements in a 3 to 4 month period.

Thus, the simple fact that a prototype has been certified as meeting the standard for 50,000 miles will not assure that production line cars meet the standard.

Nor can the recall provision be expected to provide realistic control. According to Administrator Train:

A recall investigation is a protracted and resource-intensive process. The nature of this process will inherently limit the number of recalls that will actually be achieved.

The Senate is told that the so-called "independent aftermarket" favors a reduction in the warranty term. While that may be true, the Senate must realize that the auto industry also favors a reduction, and that the manufacturers would be the true beneficiaries of the shorter warranty. General Motors told a House committee that it would be best to limit the 207 warranty to a period of one year and 12 months rather than five years and 50,000 miles.

I disagree with the view that the manufacturers should be released from their present responsibility to maintain quality control of the emissions control systems it sells for a period of 50,000 miles.

Under the Bentsen amendment, the consumer would have to pay to have his car returned to compliance after 18,000 miles. The only way to avoid this would be to do away with maintenance and inspection programs, which would surely lead to dirtier air. On this point, Mr. Train said:

It is my belief that a reduction in the term of the § 207(b) warranty will deter initiation of inspection and maintenance programs of many areas. Should reduction in the term of the present five years/50,000 miles warranty be inevitable, some mechanism to encourage implementation of inspection and maintenance programs should be substituted.

If the manufacturer carries the responsibility to maintain the car at the standard for 50,000, compliance can be achieved and maintained by more careful quality control and improved design at the factory.

The advocates of the 18,000-mile warranty state that the auto-makers have already indicated that if they are to remain liable under this performance warranty, they will require use of their own original equipment manufacturer's parts—OEM—or their equivalent, installed by their franchised dealers. Where is the evidence of this statement?

When the issue was raised in 1974, the House Small Business Committee states:

As the malfunctioning or deterioration of these parts is a result of the normal operation of the vehicle, and not the result of the emission control device, it is the owner's responsibility to have these functions serviced at his or her own expense . . . These automakers, with their extensive legal departments, realize that the antitrust laws prevent them from requiring that only their parts be used to replace those which they know will wear out prior to the expiration of the 5-year/50,000 mile warranty, or that the servicing of these parts only be performed by a franchised dealer.

Thus the House committee recognizes that the existing warranty can not be used as a tool to usurp business from the independent parts dealers. That report, however, was in error when it implied that nearly all the recent increases in car prices have been due to air pollution controls and that the industry had added \$300 to the cost of each new car to cover costs of repairing emission control systems. The actual increase, according to the Bureau of Labor Statistics, has been \$1 per car.

The so-called anticompetitive potential within the clean-car warranty is pure hypothesis. It exists, at all, I believe that it has been eliminated by the adoption of five sections already included in the bill, as reported by the committee. These include a provision for an FTC study, one that recognizes that the clean-air goals of the act are significant. Any further doubts can be resolved by the adoption of amendment 1586, sponsored by myself and Senators Baker and Stafford. That amendment states affirmatively that the car owner can go anywhere to have maintenance work done without infringing the clean-air warranty, including doing the work himself. While the Baker-Buckley-Stafford amendment in no way lessens the incentive to the manufacturer to maintain quality control and develop vehicles that are inherently low in pollution, it protects fully the consumer and the aftermarket parts and service industry.

I would also note that several provisions of Senator Bentsen's amendment—subsections (b), (d), and (e)—are virtually identical to provisions already contained in the reported bill.

Thus the members of the Senate need not vote in favor of this amendment to require the FTC study and allow for parts certification.

Mr. DURKIN. I rise in opposition to the Bentsen amendment. My concern is that I am afraid the consumer is going to pay three times. He is going to pay for inferior auto pollution equipment: he is going to pay for the upkeep of that equipment, and then he is going to pay with his lungs, with the increased level of pollution.

I think the air quality index in the Nation's capital is a disgrace. I think many people would agree that much of that is auto pollution. Even in New Hampshire we are beginning to see pollution levels rise in the southern part of the State. Again, much of this or most of this is a result of auto pollution.

I think if the auto industry takes the cue from the three-way converter that has been adapted and produced by the Engelhard Co. of New Jersey, that is the answer. They can meet the standards and I believe they can preserve the warranty.

Furthermore, I think if the auto industry would spend as much time in perfecting their pollution devices as they do in perfecting square headlights and nonessential changes on the automobiles, we

would all be a lot better off. Finally, my concern is that the Bentsen amendment is not going to help the small business, independent corner repairman in New Hampshire or any other State. For that reason, I must express my opposition.

#### AMENDMENT NO. 1586

Mr. Baker's amendment (No. 1586) is as follows:

On page 70, strike line 13 through line 25, and insert in lieu thereof the following:

"SEC. 27. Section 207(a) (1) of the Clean Air Act is amended by adding the following new sentences at the end thereof: 'The cost of any part, device, or component of any light-duty vehicle that is designed for emission control and which in the instructions issued pursuant to subsection (c) (3) of this section is scheduled for placement during the useful life of the vehicle in order to maintain compliance with regulations under section 202 of this Act, the failure of which shall not interfere with the normal performance of the vehicle, and the expected retail price of which, including installation costs, is greater than 2 per centum of the suggested retail price of such vehicle, shall be borne or reimburse at the time of replacement by the vehicle manufacturer and shall be provided without cost to the ultimate purchaser, subsequent purchaser, or dealer. The term "designed for emission control" as used herein means a catalytic converter, thermal reactor, or other component installed on or in a vehicle for the sole or primary purpose of reducing vehicle emissions. It is not intended to include those vehicle components which were in general use prior to model year 1968 and the primary function of which is not related to emission control.'".

On page 73, after line 5, insert the following new section, and renumber the succeeding sections accordingly:

"SEC. 30. Section 207 of the Clean Air Act is amended by adding the following new subsection:

"(g) For the purposes of this section, the owner of any motor vehicle or motor vehicle engine warranted under this section is responsible in the proper maintenance of such vehicle or engine to replace and to maintain, at his expense at any service establishment or facility of his choosing, such items as spark plugs, points, condensers, and any other part, item, or device related to emission control (but not designed for emission control under the terms of the last three sentences of section 207(a) (1)) that has a design life of less than the useful life of such vehicle or engine, unless such part, item, or device is covered by any warranty not mandated by this Act or unless such part fails prior to its design life.'".

MR. BAKER. This amendment is sponsored by the Senator from New York (Mr. Buckley), the Senator from Vermont (Mr. Stafford), and myself. It states affirmatively that the owners of automobiles can go anywhere they choose to have necessary and proper maintenance work done, including the accomplishment of the work themselves if they want to, without infringing their rights under the warranty for that automobile. To a very great degree, this language will meet the problems raised by members of the so-called after market parts industry, without endangering a viable auto-emission control program.

Reasonable pressure must be kept on the automobile industry to assure that the cars built and sold to consumers actually continue to meet the clean-air standards in use. Nevertheless, I agree that the Congress must be equally firm in working to prevent any anticompetitive effects that could result against the auto servicing business.

To balance such dangers, the Committee on Public Works has already included five specific provisions in this bill: Sections 25, 27, 28, 29, and 39. I support those sections. I believe that our substitute will further clarify the right of the consumer to have necessary maintenance work done wherever he chooses.

Our substitute appears necessary because of the strong conviction that remaining among some representatives of the independent auto parts and service industry that the clean air warranty could drive business into the shops of the car dealers. I believe that this substitute achieves that protection without the several failings that I believe are inherent in the Bentsen amendment.

The Bentsen amendment, I believe, ignores the objective of clean, healthy air.

It imposes additional burdens on the consumer, as it would shift the cost of repairing a faulty emission control system from the manufacturer to the owner.

Possibly most significant, it eliminates any financial or practical incentive for manufacturers to produce an emission control system that functions effectively for the car's life, since the manufacturer's exposure would be for only 18,000 miles.

And it fails to accomplish the stated objective of improving the competitive position of the independent garage owner, at least in comparison with the protection in the present bill.

Strong warranty provisions are vital if the goals of the Clean Air Act are to be achieved. Reducing the length of the performance warranty, of course, does not terminate the responsibility of the consumer to assure that his car remains in compliance with required standards. More and more States are adopting emission inspection programs. Under the Bentsen amendment, the consumer would lose his protection against any failure of the manufacturer to produce a clean car, even before most cars are paid for. In recognition of this fact, the Consumer Federation of America and Consumers Union have stated their strong opposition to the Bentsen amendment.

Nor, I believe, will the Bentsen amendment augment the competitive position of the independent garage owner. Under current law, auto-makers are prohibited from conditioning any performance warranty upon the purchase of parts or service from a franchised dealer. The committee bill requires that all owners' manuals contain instructions that any necessary maintenance need not be performed by a franchised dealer or using the manufacturer's parts. [Sec. 207(3)(A)]

The 50,000 mile warranty has been in the law and in the drivers manuals for over 5 years. The independent parts dealers now hold some 80 to 85 percent of the business. That proportion has actually increased in the years since adoption of the 50,000 mile warranty in 1970.

The performance warranty establishes a realistic test of whether the manufacturer is carrying out his responsibility that cars be built to meet the emissions standards for the useful life of each vehicle. Without an effective performance warranty, I am convinced we will eliminate any incentive to the manufacturer to produce an emissions system that, when properly maintained, performs to the emission standard for which the consumer has paid.

If we cannot be sure that new cars meet the standards and that those cars will continue to meet those standards on the highway, our clean air goals will not be realized and public health may be endangered.

In summary, this amendment to the bill, contains two provisions:

First, it strikes the language of the bill that requires the manufacturer to provide a free replacement of any device principally related to emissions controls that costs at least \$75 and must be replaced before

50,000. That provision in the committee bill would be deleted, and instead, the Baker amendment would specify that such replacement specifically relates only two things, the catalytic converter, or a thermal converter, if they are scheduled for replacement prior to 50,000 miles and if the replacement cost exceeds 2 percent of the sticker price of the automobile, which I believe in every case would be more than the \$75. [Sec. 207(a)(3)]

Second, and more important, the Baker amendment adds a sentence that states the carowner can go anywhere he wants to go to have the proper maintenance on that car performed, with whatever parts may be appropriate. It places the burden for proper maintenance on the carowner, but relieves him of any real or imagined responsibility to go back to the car dealer to have routine maintenance work done. [Sec. 203(a)(4)(e)]

As the distinguished Senator from Texas and others have pointed out, the business of the replacement of spark plugs, of points, of oil filters, of air filters, and the like can be done in dealers' shops, but this amendment makes it clear that it need not be done there, and, as pointed out previously, up to 80 or 85 percent of that work already is done outside the franchised dealers' shops.

The choice, I believe, is between an 18,000-mile warranty and a 50,000-mile warranty. The Baker amendment would preserve the 50,000-mile warranty. On the other hand, it provides sufficient protection against the anticompetitive implications of the provision, so that the after-market industry is fully protected. I have discussed this amendment with substantial and significant parts of the after-market industry, and while they are not entirely satisfied with it, they much prefer it to the law as it stands now, and even prefer it to the improvements written into the law by the full Public Works Committee.

I think the Bentsen amendment goes too far. I think the Baker amendment provides enough protection for the after-market industry, without sacrificing the clean air goals of the act, and of the Senate, over the past several year, and protects the consumer, ultimately, in an important way.

Mr. McClure. I am troubled by one problem we have in this whole situation, which the Senator's amendment seeks to clarify, and that is, which components of the automobile are those which are principally, primarily, or exclusively for pollution control?

The Senator has used the examples of the catalytic converter or the exhaust gas recirculator. Those, I think, are clearly so; and under the language appearing at the bottom of the first page of the Senator's amendment, which says, "the failure of which shall not interfere with the normal performance of the vehicle," very clearly eliminates things like carburetion, fuel injection, spark plugs, and so on.

Then I get over to page 2 of the amendment, lines 10 to 13 where, as the Senator seeks to define the term "designed for emission control," he has added terminology which lends confusion to my mind, at least, and tends to cloud that definition, where it is said it is not intended to include those vehicle components which were in general use prior to model year 1968, and the primary function of which is not related to emission control.

Does that mean that the purchaser of a Chrysler lean burn engine has no warranty provision that will apply because the manufacturer's strategy for the attainment lies in the carburetion? Does it eliminate from the warranty provision the purchaser of a Cadillac so far as the electronically controlled and monitored carburetion is concerned?

Mr. BAKER. Let's look at the Chrysler lean burn engine. It, of course, does not have a catalytic converter or a thermal converter. Rather it has a sensing system which feeds, I believe, six inputs into an electronic computer and does a very exotic job of regulating the spark advance and retard and produces then, as the name implies, a clean burning engine. It really produces a very lean burning engine.

I think that clearly the provisions of line 6 through 8 would not apply.

The term "designed for emission control" as used herein means a catalytic converter, thermal reactor.

They have neither of those, they would not have any problem with this or other component installed on or in a vehicle for the sole or primary purpose of reducing vehicle emissions.

[The amendment] is not intended to include those vehicle components which were in general use prior to model year 1968, meaning that certain exhaust system components, certain recirculation systems, certain air induction heating systems, and others, that were put on for performance and not for emission controls. To make sure, we do not by this amendment go back and make automobile manufacturers pick on things that were never intended to be emission control devices, but may now be used in certain control strategy in current model year cars. [Sec. 207(b)(2)]

Mr. McCLURE. Or might incidentally affect the pollution performance of the automobile, but are not really intended for that purpose.

Mr. BAKER. Not solely or primarily for that purpose, as the amendment states.

Mr. McCLURE. Yes. But it is the addition, the remainder of that sentence that causes me the problem because it goes on to say "\* \* \*" and the primary function of which is not related to emission control "\* \* \*."

Mr. BAKER. The interpretation that I put on it, as the major author of it, is that it is just as stated: that is meant to separate out those devices which appeared on cars for performance purposes as distinguished from emission control purposes.

Mr. McCLURE. Is it the Senator's expectation then that the sensing devices in the Chrysler lean burn that are related to carburetion would be covered?

Mr. BAKER. It is my hope that they would be covered, if they are scheduled for replacement at more than 2 percent of the car's cost. They were certainly put on for emission controls. A good argument, in my view, could be made for using them for performance improvement as well, and we do probably get a little performance improvement. But I do not think anyone could make a serious argument against the idea that the computer sensors in the Chrysler lean-burn system were put there to meet statutory emission standards without the use of a thermal converter or a catalytic converter.

Mr. McCLURE. So that that would be a covered portion of the emission controls, even though it is part of the carburetor or carburetion

system; the same thing would apply to any other automobile in which an electronic system has been added in order to move in the direction of pollution control.

Mr. BAKER. I think that is true. I think it ought to be borne in mind as well, though, that the amendment provides that there is a responsibility for the manufacturer to do it under section 207 (a) only if the cost exceeded 2 percent of the sticker price of the car. That might or might not remove the Chrysler lean-burn system from the coverage.

There is one point I wish to make. It concerns this business of the cost and the coverage of exotic ignition or fuel metering systems. It is going to mean a whole lot because, as we go into more advanced cars and in future model years, as we may go into multiple catalysts, more fuel injection, and they may have to meter, not only the fuel mixture, but the whole series of environmental parameters, meaning air pressure, temperature, the amount of oxygen in the mix, and the like. The complexity of those systems will grow.

I shall say now for this Record that it is in contemplation of that sort of intricate and complex system that I believe "primarily for emission controls" ought to be included and was included in this amendment.

Mr. McCURE. When we refer, then, to those systems which are more complex than simply adding a converter or replacing a converter, or a thermal reactor, we are dealing with a complex system which has many components. That gets back to the second question that I have about the amendment of the Senator, which deals with the 2 percent of the suggested retail price of the vehicle. Is the Senator talking about the entire system, or is he talking about each component of the system? Is he talking about the cost of the system, as a whole, or the individual repair which will be required to bring it back up to performance standards?

Mr. BAKER. The Senator poses a problem that it is almost impossible to answer if we do not yet know what systems are going to be adopted by the major manufacturers. We have a good idea, but we do not yet know. We do not quite yet know how the systems will be interrelated. My hope and expectation would be that the amendment would cover two things. Now and in the future, clearly, it would cover the cost of the catalytic converters and thermal reactors. I do not think there is any argument about that. And beyond that, it is my hope and expectation that it would cover the entire aggregation of components that were dedicated to the emission control program for the car, if they are scheduled for replacement before 50,000 miles and would cost over 2 percent of the sticker price.

One can extend that ad infinitum. But I am speaking now of such things as fuel metering, air metering, afterburner treatment, fuel injection, electronic ignition, and the range of sensing systems that are calculated to burn lean or to otherwise control the level and type of emissions that come from the car.

All of those ought to be treated as a system. They ought to be thought of primarily for the purpose of reducing vehicle emissions.

Keep in mind, also, that this only involves prepaid replacement of those parts. We are not talking about whether or not one can go back under his general car warranty and allege, for instance, that his fuel injection metering pump went out. That would be covered under the

regular warranty on the car anyway. But we are talking about the prepaid items where one can go back and say: "Look, I have already paid for this, and it is scheduled to last 30,000 miles. Its primary purpose was to reduce vehicle emissions; therefore, I want my part."

Mr. McCLURE. My only problem remaining with that is this: Let us take an electronic fuel metering system, where they are complex and interrelated and the entire system cost in excess of 2 percent of the cost of the automobile, but the individual part that failed was only \$40: the cost of the part with installation might be \$65. Will the amendment of the Senator from Tennessee cover that individual component and labor where it would be less than 2 percent of the cost of the automobile, although the entire system was more than 2 percent of the cost of the automobile?

Mr. BAKER. I think the Senator is asking me to say things I do not know. I do not blame him because they are good questions. But I do not think it is possible to know.

Let me give the Senator a precise example. Let us take the case of a Cadillac Eldorado where fuel injection is an option and not standard. It is standard, I understand, on the Cadillac Seville. Let us assume that it is this year's model, where fuel injection is there as an option because it is attractive from a performance standpoint and, as far as I know, is not necessary for the performance of the catalytic converter or any of the other emission control devices. In that case, in my judgment, the fuel injection system will be covered by the general car warranty. Let us take it 2 more years. Let us change it. Let us assume that we have a Volvo, with triple catalyst and a fuel metering system that is going to meter not only for performance but also in order to accommodate the more complex requirements of that intricate catalytic conversion system, where you have to measure not only the temperature but also the amount of oxygen and pressure and certain other parameters. In that case, fuel injection is absolutely essential if you are going to use a multiple catalyst.

In the case of the Volvo—with no disservice to the Volvo—that is part of the fuel system and that is part of the cost. It will be covered in the 50,000 mile warranty as a prepaid cost if it is scheduled for replacement prior to 50,000 miles and would cost 2 percent or more.

Mr. McCLURE. If I understand correctly, from the remarks of the Senator from Tennessee, it would be his intention, as the principal author of this amendment, that if the entire system costs more than 2 percent of the cost of the automobile, the replacement of any component part of it still would be covered by the provisions of this, even though it would be less than 2 percent of the cost of the automobile.

Mr. BAKER. Under the 50,000-mile warranty.

Mr. McCLURE. Under the provisions of this amendment, it would be covered.

Mr. BAKER. Which is the same as the existing law.

Mr. McCLURE. Excuse me?

Mr. BAKER. The 50,000-mile warranty being the same as the warranty under existing law.

Mr. McCLURE. I just wanted to make sure that we did not end up with some ambiguity as to what this amendment means. If indeed a component replacement cost is less than 2 percent of the automobile cost, would it be covered under the language of this amendment? My

understanding is that if any other system of which it is a part costs more than 2 percent, the replacement of any component part of that system also would be covered in the same way that the entire system would be—no greater or no lesser amount.

Mr. BAKER. The best answer I can give is this: We are talking about parts that are scheduled for replacement before 50,000 miles. In the amendment, we are talking about parts that cost more than 2 percent of the sticker price. We are providing that the manufacturer must prepay those parts. In those cases, if they are scheduled for replacement, the manufacturer does prepay it. It does not make any difference, so long as it is related to emission controls.

In the other example, where we have a part that is not scheduled for replacement but it fails, such as a fuel injection pump, it would be covered under the general requirement of the existing law that says, you have to warrant the performance for 50,000 miles.

Mr. McCLURE. Regardless of cost?

Mr. BAKER. Regardless.

Mr. McCLURE. And it is not the Senator's intention, by this amendment, to affect that?

Mr. BAKER. That is right.

Before I yield to the Senator from Vermont, I ask unanimous consent that the full Bentsen amendment, No. 1614, may be offered as a substitute for my amendment No. 1586, so that there will be no question about the appropriateness of the Bentsen amendment being offered as a substitute for the Baker amendment, as contemplated by the previous unanimous consent order.

Mr. BENTSEN. That is with the understanding that the provisions of the Bentsen amendment, as applied to the bill itself, will also be fully implemented.

Mr. STAFFORD. The amendment offered by the Senator from New York (Mr. Buckley), the Senator from Tennessee (Mr. Baker), and myself is designed to provide both clean air and fair and free competition in the servicing of automobiles.

It is important that reasonable pressure be maintained on the auto industry to have the auto manufacturers produce cars that not only meet clean air standards when new, but continue to meet those standards when they are being used by American motorists.

It is equally important that this goal is achieved in a way that will prevent any anti-competitive situation from developing in the business of servicing automobiles.

It is my conviction that the committee bill contains provisions that protect the consumer and the after-market industry. But, in view of the continued concerns that have been expressed by the after-market industry, the amendment we have offered makes clearer the intent of the act. That intent is to protect the right of the consumer to have repair work performed wherever the consumer chooses.

The committee bill does not intend that the Clean Air Warranty should drive business into the shops of the automobile dealers, and the bill does not do that.

Our amendment makes it clear that the owner of a car has a responsibility to maintain that car in proper fashion. It would be the responsibility of the owner to replace or to have maintenance done on parts that have a design life of less than 50,000 miles, which is the "useful

life" of the car. In this matter, we are talking about spark plugs and oil changes, and the like. That maintenance work may be done wherever the owner wishes, without jeopardizing the owner's rights under the warranty.

Our amendment also makes it clear that the manufacturer will have to stand behind the warranty of 50,000 miles for the essential and specifically designed emission control device or part. That means, generally, the catalytic converter, thermal reactor or other major component installed on the auto for the sole, or primary, purpose of controlling emissions.

To reduce the warranty terms to 18,000 miles would be unwise for at least two major reasons. It would enable the auto manufacturer to relax quality control to the point where the quality of our air would be reduced; and it would also place greater maintenance and costs burdens on the consumer.

Mr. BUCKLEY. I join the Senator from Vermont in urging support for this amendment. I am very pleased to be a cosponsor of the Baker amendment. I feel that it strengthens the provisions already in the act to protect the after-market.

I believe that this amendment will clarify the point that carowners can go anywhere they please to obtain service for their cars. As such, this amendment will eliminate any residual anticompetitive effects that some argue exist in the present performance warranty.

In a recent statement—and I think this is most significant—the Motor Equipment Manufacturers Association, an association of some 750 parts makers, stated its "overwhelming and unbending support of the amendment to be offered by Senators Baker, Buckley, and Stafford.

The first part of our amendment is a substitute for the provisions in section 27 that requires prepayment for any device principally for pollution control that costs \$75 or more. Our substitute specifies that such prepayment will extend only to items such as the catalytic muffler and that the price be based on a percentage of the car's sale price, rather than a fixed dollar amount. While the concept of this provision in section 27 is essential to assure that cars are not certified with catalysts that will last only a few thousand miles, I believe that our substitute provides a more reasonable definition, one that inflation cannot outrace.

The second—and more significant—part of this amendment makes clear that it is the carowner's responsibility to maintain his car properly to obtain the benefits of the performance warranty. It makes explicit what is now implicit in the law. It will be the responsibility of the owner to have this maintenance done on parts that have a design life less than the 50,000-mile useful life of the car, such as spark plugs or motor oil. That maintenance work may be done wherever the owner wishes, without jeopardizing the owner's right under the warranty.

An illustration that was included in the committee report may prove helpful. The manufacturer of a car recommends to the buyer that he replace the spark plugs at 12,500 miles. In this example, the spark plugs may need replacement on a particular car at 14,000 miles. It has been argued, incorrectly, that the performance warranty requires the carowner to return to his dealer to have those spark plugs replaced.

It is the intent of the present law—and it is spelled out in this amendment—that the owner carries the responsibility for this work, which can be done anywhere the owner wishes. If the owner does not make those needed replacements, and that becomes the reason a car fails an in-use air-standards test, then that is evidence of improper maintenance, voiding the effectiveness of the warranty coverage, at least until the spark plugs are replaced by the owner. This amendment should encourage wise and proper maintenance of cars.

The alternative approach suggested by my good friend from Texas (Mr. Bentsen) would reduce the warranty term to 18,000 miles. That would be unwise. It would enable the automotive industry to relax its quality control to the point that cars in use are likely to become far heavier sources of pollution. This would increase the burden on the consumer to have cars brought back into compliance at the consumer's expense, should they fail an inspection test of emissions, even with careful and proper maintenance.

I urge that the Senate support the Baker amendment.

Mr. MUSKIE. I support the Baker amendment. It was filed at the same time as the committee bill. There is a description of it that was contained in the individual views that were included in the committee report. I think its effect is to strengthen the provisions of the bill and add some other acceptable safeguards. For reasons that I think have been so well spelled out in the colloquy between Senator Baker and Mr. McClure and by Senator Buckley and Senator Stafford, I support the amendment.

Mr. BENTSEN. On the question of lessening the clean-air standards, there is no intent at all to try to bring that about, and I do not think my amendment does that. What we are looking at, again, is a production warranty that must not be confused with a performance warranty. We have adequate safeguards in the production warranty to see that the burden still stays on the manufacturer. When we talk about going from 5 years/50,000 miles on the performance warranty to 18 months or 18,000 miles, whichever comes first, we have not at all affected the production warranty requirements of 5 years or 50,000 miles, and have no intention of doing so. We have procedures under the act providing EPA the right to check assembly line production. We also have the recall procedure which, if EPA finds five of the models not meeting that standard, an investigation can be initiated and a recall ordered.

If we had a situation where EPA saw vehicles out there at 20,000 miles and the whole class or model of cars failed, that is obviously a production failure and there would be a recall ordered. Again, you have the recall requirements put on them so we have adequate safeguards there.

I have heard some people on this floor say that they have taken care of the independent garageman. The message has not gotten across to him, and he does not believe that at all. I agree with those garagemen that we have not.

The National Congress of Petroleum Retailers, the gas station operators, write:

Our members are certain that the provisions as currently drafted will have a disastrous effect on their business, on their employees, and on the consumer's ability to get the best price and service for their vehicles. The performance warranty will effectively force the consuming public to return their vehicles to franchised dealers for all parts and services to their cars for 5 years or 50,000 miles so they can be sure they are not invalidating their warranties.

My good friend from Tennessee has addressed himself to the problem and he has attempted to protect the independent garageman, but, frankly, I do not think he has gone far enough. The pressures are going to be on that carowner. When he has a failure in performance and has been using an independent garageman and goes to the franchised dealer for warranty repair, that franchised dealer has to make, in part, a judgmental decision. Some judgment will be involved there. There will be a swearing match as to what was done, whether the owner really followed the manual, whether the independent garageman did. They are going to have a hassle.

Finally, perhaps, he gets paid, even if he happens to be a car owner who is on the road and will never see that franchised dealer again. We would hope that even under those conditions, his warranty coverage is provided and he gets just compensation. But there is no question that there is going to be more argument involved than if he had been going to a franchised dealer all the time.

How does the car owner avoid that? The way he avoids it is just to go to franchised dealers from then on and not have that kind of dispute. Those are the pressures that are going to be on the car owners of this country. That is how we are going to close the doors of 400,000 independent garagemen in this country.

I think that is wrong. I think that lessens competition. There is a place for the franchised dealer. He does a great job. But there is a place for that independent garageman who also does a good job for the people of this country in giving them competitive service.

The sponsors of the Baker amendment said that cutting back to 18,000 miles and 18 months on the performance warranty, not the production warranty, puts an additional cost on the consumer, because it shifts the burden and the expense of repairing the faulty emission control system from the manufacturer to the carowner.

Under a warranty, the question is not who pays, but when. Is anybody under the illusion that it is not going to be a carowner who finally pays? He is the man who is going to pay the cost.

It is just a question of when it is done. Under a prolonged performance warranty, the owner pays for coverage at the time of purchase and then must properly maintain the car and have the warranty work performed by the franchised dealer of the manufacturer if he really does not want to be hassled over it.

Also, under a prolonged 5-year and 50,000-mile warranty, the consumer, the carowner, pays for the coverage, which he may never claim. If his vehicle never fails an emission test, he will not seek warranty repairs and he will have lost the \$160 to \$260 he paid for that coverage at the time he purchased the car. That cost will be built into his car and he will be paying for it.

In the meantime, the manufacturer will be drawing interest on his money for the extra charge that he made.

Coverage under a performance warranty of 5 years or 50,000 miles or any other period of time will not be automatic or be a blanket. The carowner will have to maintain his car according to the schedule outlined in the owner's manual. He must show that he has used the original equipment manufacturer's parts or their certified equipments, and that he has had them properly installed. If he cannot prove all three of those conditions, he can be denied compensation under the warranty.

The charge has been made that the 18 months and 18,000-mile performance warranty would eliminate any financial incentive for the manufacturer to produce a durable emission control system. That simply is not correct. The 5-year/50,000-mile production warranty obligation would remain in effect, and the auto maker is required to warrant that the vehicle is designed, built and equipped to meet those standards at the time of sale. The warranty also requires that the vehicle is free from defects in materials and workmanship which would cause that engine or that vehicle to fail to conform to the applicable regulations for its useful life, and that useful life is now set at 5 years and 50,000 miles, and it is going to stay that way under my amendment.

I agree with the House Small Business Committee in saying that the 5-year/50,000 mile warranty is unnecessary and may well put many of your independent garagemen, all 400,000 of them, out of business.

Mr. McCLURE. I have a problem with the Baker amendment involving this entire question, and I think it is a question of understanding, and I would like to at least get that understanding on the record.

In our conversations in the committee, on the floor, in the hallways and everywhere else we have failed to make the distinction, I think, that must be made essentially as to what 207(a) and 207(b) cover, the distinction between the warranty under 207(a) and 207(b).

As I understand, the 207(a) warranty to which the Baker amendment addresses itself primarily, at least in the 2-percent requirement, that is a design warranty. It is not a performance warranty. It does not say that this part, installed in the car, must go 50,000 miles or the manufacturer is liable. It says that the manufacturer must design that part to go 50,000 miles, and if it is designed and produced as though it ought to go that far, they have met their responsibility unless the carowner can prove that there was a defect in materials or workmanship that might bring them back into a warranty provision.

But if it fails in less than 50,000 miles, and the carowner cannot show a defect in material and workmanship, the manufacturer is not liable, as I understand, under 207(a).

It also says you can design a part that must be, that is designed to be, replaced in less than 50,000 miles, and if the car manufacturer designs such a part for such replacement and it is a part of the emission control system that the part must be replaced, the replacement must be made for the 50,000 mile period. But we should not assume that the 207(a) warranty is a 50,000-mile performance warranty of that part because the very essential element of the proof of defect in materials and workmanship is a very difficult one, and the fact that it failed in less than 50,000 miles does not guarantee replacement of that part by the manufacturer at the manufacturer's expense.

So the 207(a) warranty is not a warranty that in all instances will bind the manufacturer to replace, under the committee bill, under existing law, or under the Baker amendment.

Mr. MUSKIE. I think that is an accurate statement of the law. Replacement will be required if the part is defective, as I understand it. The Senator from Tennessee may want to add to it.

Mr. McCLURE. Let me add further, do not misunderstand what I am saying about the 207(a) warranty as affecting the 207(b) warranty, which is a different matter.

Mr. BAKER. I think the Senator is right insofar as (a) goes. (a) is a design warranty. It says:

Either you build this part so you think it will last 50,000 miles, and that EPA agrees it will last 50,000 miles, or if you do not do that then design it so it will last less than 50,000 miles and you are going to replace it as a matter of routine maintenance if it is brought back.

The kicker in the thing, so far as the after parts market is concerned, is they say, "Look, we are losing all that bring-it-back trade because you always have to take it back to the dealer."

What we are saying is, no, you do not. You only have to take it back to the dealer if it is a prepaid part that costs more than 2 percent of the net sticker price of the car and it is a catalyst or thermal reactor.

The 207(b) provision is, in fact, a performance warranty. I remember very well when the clean air amendments of 1970 were enacted that section (a), as I recall it, was my proposal. Section (b) was John Sherman Cooper's proposal, and we ended up, as we often do, doing both.

Mr. McCURE. The reason I raise the issue is that there should be no illusion as to the extent of the 207(a) design warranty for 50,000 miles; 207(b) does include plugging a portion of that omission under 207(a), but there is a different burden of proof under 207(b) than there is under 207(a), and the burden of proof is a burden of proof on the car-owner in each instance.

That is true under the section of the Baker amendment, as well. If I understand section 30 that appears on page 2 of the amendment at line 16, that burden of proof lies with the owner as it does under the committee bill, if I understand both the committee bill and the Baker amendment; am I correct?

Mr. BAKER. So far as the burden of proof is concerned, all you have to prove is that the thing does not perform according to the emission requirements.

Mr. McCURE. And that you have maintained the automobile according to the maintenance schedule published by the manufacturer.

Mr. BAKER. That is correct, but you do not have to do it at the dealer's showroom.

Mr. McCURE. Right.

The reason I bring that out is because it may be a difficult burden of proof for the owner to bear, and also invites the manufacturer to establish a more elaborate maintenance schedule than otherwise would be required, so that you can, in essence, create more doubt about whether the maintenance schedule was maintained or not, and if it was not, then it voids the warranty and it voids the liability of the manufacturer.

Mr. BAKER. We ought to say for the record though, in all justice and fairness to the automobile industry, that they have been very, very good about their performance on these warranties. Most times I know of when there has been any question they have resolved it in favor of the owner. I am sure there are exceptions to that and, no doubt, I will get letters pointing them out. But, by and large, the automobile industry has been very, very good about that, and what we are dealing with here is whether or not we need to protect the aftermarket suppliers, the independent garage owner, the mechanic, and the like. The purpose of the Baker amendment is to do that and to strengthen the protection and the competitive position of the independent operator under (a) and (b).

Mr. McCURE. I do not mean to burden this discussion unduly, but it seems to me when we start talking about protecting the consumer, what we are trying to do here, as we are trying to compromise the various pressures we are dealing with, is actually increasing the cost to the consumer of maintaining his automobile.

Because we are, in essence, trying to thread three needles at once.

With my eyes and the sight that I have, I find very great difficulty getting the thread through the eye of one, let alone trying to thread three at once.

But we are trying to thread three at once. We are trying to say to the manufacturer, "You build that car this way, you meet these requirements."

At the same time, we are trying to protect the market freedom of both the purchaser and the supplier of the goods and services in the market so that we do not force everyone to go back to the franchised dealer or the manufacturer.

Third, we are trying to protect the consumer in this instance against merchandise that does not meet the warranty.

We are also trying to find a way by which we can see that these cars perform the way they are supposed to perform in use and not just in theory, and we compromise each one of those as we try to find the best way of balancing.

It seems to me that inherent in all this is going to be an increased cost of maintenance. That is an inherent part of the problem of meeting the pollution goals we are trying to meet.

As we are trying to clean up the air in this country, the consumer is going to pay a bill. A part of that bill will be paid on the maintenance of his automobile. We are trying to determine just exactly where that cost is going to be paid. But it is going to be paid by the consumer in the original price or in the kind of maintenance he has to do and in the maintenance requirements themselves.

Mr. BAKER. In a nut-shell, we are going to decide in the Baker-Bentsen amendments whether the warranty on the car ought to be 18,000 miles or 50,000 miles.

I happen to think it ought to be 50,000 miles.

Next, we are going to decide whether or not we ought to beef up the protection of the individual garage owner or leave it to the automobile dealer.

I think we ought to beef it up for the independent garage owner and I think we have in the Baker amendment, without throwing the 50,000-mile warranty out the window.

Last, America does a lot of things well. But I do not think anybody even approaches America in the building of quality automobiles.

Mr. BUMPERS. My questions go to the Senator from Tennessee.

How long has the 5-year, 50,000-mile warranty been in effect in this country?

Mr. BAKER. It has been in effect since the Clean Air Amendments of 1970.

#### AMENDMENT NO. 1614, AS MODIFIED

Mr. BENTSEN. I offer the amendment in the nature of a substitute to the Baker amendment, applicable to the provisions and applicable as originally proposed to the bill itself.

In lieu of the language intended to be proposed by the Senator from Tennessee (Mr. Baker) insert the following:

On page 70, beginning with line 13, strike out all through line 5 on page 73, and insert the following:

"SEC. 27. (a) Section 207(b) (2) of the Clean Air Act (42 U.S.C. 1857f-5a(b)) is amended by adding the following at the end thereof: 'No such warranty shall be invalid on the basis of any part used in the maintenance or repair of a vehicle or engine if such part was certified as provided under subsection (a) (2)'."

"(b) Section 207(a) of such Act is amended by inserting '(1)' after '(a)' and by adding the following new paragraph at the end thereof:

"'(2) In the case of a motor vehicle part or motor vehicle engine part, the manufacturer of such part may certify that use of such part not result in a failure of the vehicle or engine to comply with emission standards promulgated under section 202. Such certification shall be made only under such regulations as may be promulgated by the Administrator to carry out the purposes of subsection (b). The Administrator shall promulgate such regulations no later than two years following the date of the enactment of this paragraph.'

"(c) (1) Section 207(b) of such Act is amended by striking out 'its useful life (as determined under section 202 (d))' in each place it appears and inserting in lieu thereof 'a period of eighteen months or eighteen thousand miles (or the equivalent), whichever first occurs'."

"(2) Section 207 of such Act is amended by adding the following new subsection at the end thereof:

"'(g) In lieu of the eighteen-month or eighteen-thousand-mile period of use referred to in subsection (b) there shall be substituted "the useful life of the vehicle or engine (as determined under section 202(d))" if the Federal Trade Commission finds under section 27(d) of the Clean Air Act Amendments of 1976 that no significant anticompetitive effects result from the application of such warranty for such useful life.'

"(d) The Federal Trade Commission shall undertake a study to determine whether or not any anticompetitive effects would result from any warranty required to be provided pursuant to section 207(b) of the Clean Air Act if such warranty applied for the useful life (as determined under section 202(d) of such Act) of vehicles and engines to which such warranty applies in lieu of the eighteen-month or eighteen-thousand-mile period specified in such section 207(b). Such study shall include public hearings. Such study shall include an analysis of any measures implemented by the Administrator to prevent or diminish such anticompetitive effects and shall include a finding with respect to whether or not a significant anticompetitive effect would nevertheless result from such warranty if the warranty applied for such useful life. Such study shall be undertaken primarily by the Bureau of Competition in consultation with the Bureau of Consumer Affairs."

"(e) (1) Section 207(c) (3) of such Act is amended by inserting after the first sentence thereof the following: 'In no event and under no circumstances shall a manufacturer (in written instructions or otherwise), specify, require, or designate the use of any proprietary or brand name automotive part, material, or substance for purposes of this paragraph. For such purposes, the manufacturer may only specify performance standards or engineering specifications or the use of parts which have been certified as provided in subsection (a) (2) or parts meeting such standards or specifications. No manufacturer may directly or indirectly specify for such purposes that maintenance, replacement, or repair may only be performed by franchised dealer or approved automotive service establishments. The manufacturer shall provide in boldface type on the first page of the written maintenance instructions notice that maintenance of the emission control devices and systems may be performed by any automotive repair establishment or any individual using any automotive part which meets the performance and engineering specifications of the manufacturer or which has been certified as provided in subsection (a) (2)'."

"(f) Section 207(c) of such Act is amended by adding at the end thereof the following new paragraph:

"'(4) In the case of any nonconformity of any vehicle or engine required to be remedied at the expense of the manufacturer under this subsection, the owner of such vehicle or engine shall be, under regulations promulgated by the Administrator, compensated by the manufacturer for any amount expended by him with respect to such nonconformity before the date on which such nonconformity is required to be remedied under this subsection.'"

On page 73, line 6, strike out "SEC. 30" and insert "SEC. 28".

Renumber sections 31 through 38 as sections 29 through 36, respectively.

On page 88, beginning with line 15, strike out all through line 9 on page 89.

On page 89, line 10, strike out "SEC. 40" and insert "SEC. 37".

Renumber section 41, as section 38.

Mr. BUMPERS. I have tended to support the Senator's amendment because of what I thought were anticompetitive elements of the way they were carried out.

What I want to ask is, if the Baker amendment is adopted it was my understanding that this warranty could be perfected at any dealer and not necessarily the dealer from whom the automobile was purchased, or a similar dealer.

For example, if I owned a Chevrolet automobile and the emission control device became defective at any time during its life, in this case we will say 5 years and 50,000 miles. I could take it to any garage, not necessarily the Chevrolet dealer from whom I bought it, or any other dealer, but any garage, and have it replaced or repaired.

Now, do I understand the Baker amendment correctly?

In other words, it would prohibit the automobile manufacturer from insisting we bring it back to that dealer?

Mr. BAKER. The Senator from Arkansas is entirely correct.

Mr. BENTSEN. I think the Baker amendment is a step in the right direction.

The problem is this. The man is entitled to go to anyone for service he wants to, but then the burden of proof is on him when he goes to that franchised dealer to get fulfillment on his warranty when he has had a problem. And here we have a situation where we have, in effect, a man who becomes the judge as to whether or not there was compliance with the "proper" maintenance requirement, whether the owner really fulfilled the obligation spelled out in the manual.

And who is the judge? He is the franchised dealer.

And what is he judging? The work of his competitor, the independent garageman.

So I think that is loaded against the independent. That is my concern.

I think what the Senator from Tennessee is trying to do is a very worthwhile objective. He is trying to achieve the same thing I am trying to achieve.

But the problem we have is that the judgment of that franchised dealer just has to be colored by the fact that this man who has done the work is not one of his own mechanics, not one of his own colleagues, but actually a competitor of his.

Mr. MUSKIE. I want to make two points, in order to make clear what I think are the critical points on that chart.

That chart, in my judgment, is the whole argument against the Bentsen amendment.

We have been struggling since 1963 to clean up the new car because the used car is not amenable to retrofit for that purpose in any effective way.

Since the 1967 act we have been imposing standards upon new cars for the purpose of cleaning up old cars. The black line on each of those charts shows what the standards have been. They have changed: they have grown tougher as we have gone along. Hydrocarbons, carbon monoxide, and nitrogen oxides are shown on the chart. Those are the

standards for which automobiles were certified before they went into production.

In use, the red line shows that they have failed to meet the standards by wide margins.

How in heaven's name are we going to get that red line down to the black line and meet the health standards unless we use every tool that is available to us for bringing pressure upon the manufacturer?

If the used car were amenable to modification for cleanup purposes, then the neighborhood garage, the neighborhood dealer, the neighborhood mechanic could do it. But they cannot. Only the manufacturer can design the car so that it will meet the clean air standards. If we tell the manufacturer to design it for an 18,000-mile warranty instead of a 50,000-mile warranty, we are never going to get that red line down to the black line.

That is the problem. That is the issue before the Senate.

With respect to the after-market parts industry, nobody is more concerned about their welfare than I am. But we have written safeguards into the bill. The Baker amendment adds other safeguards which protect their competitive position; which prohibit the automobile industry from intimidating the consumer into using the franchised dealer; which give the independent parts manufacturer an opportunity to get his parts certified so that they will meet the clean air standards. I think all of that is a reasonable concession to the desire and the need for competitiveness in the parts industry.

Mr. BENTSEN. On these lines on the chart which concern all of us, what we are talking about is the fact that the performance warranty has not been in effect during that period of time. They have not had the ability to enforce the performance warranty. That is the major reason.

The point we must make sure of is that we do not confuse the production warranty with the performance warranty. What the Senator from Maine is really concerned about, I believe, is a conscientious enforcement of that production warranty. I share that with him. I believe we have the tools in the bill, and I have not touched that in any way, to see that that production warranty is enforced and that the big cars have that problem, that responsibility and that obligation.

But I do not want to see in the after service market the 400,000 independent garagemen in this country precluded from doing business.

Mr. BUMPERS. I do not think I received the right answer to my question of a while ago. As I read the Baker amendment, it says the owner is responsible for those items which are related to emission control but not the emission control device itself. Is that correct?

Mr. BAKER. Are we talking about the second section of the bill?

Mr. BUMPERS. Section 30(g).

Mr. BAKER. It says:

For the purpose of this section, the owner of any motor vehicle or motor vehicle engine warranted under this section is responsible in the proper maintenance of such vehicle or engine to replace and to maintain, at his expense at any service establishment or facility of his choosing, such items as sparks plugs, points, condensers, and any other part, item, or device related to emission control.

Mr. BUMPERS. But then it has in parenthesis "but not designed for emission control."

Mr. BAKER. That means items such as the catalytic converter or a thermal reactor, as spoken of in the previous section. But everything, really, on the car is related to emission—spark plugs, points, air filter, oil filter, and the like.

It is my view that with the Baker amendment one can take the car anywhere he wants to and get any thing done as long as the parts are certified, or a person can do it himself.

Mr. GRIFFIN. I rise in support of amendment No. 1614, offered by the Senator from Texas (Mr. Bentsen).

I am a cosponsor of this amendment which would modify the section 207(b) warranty provision of the 1970 Clean Air Act. I share the view of many in the independent service sector and those "do-it-yourself" carowners who are concerned about requirements that preclude them from performing emission control-related repair work.

It is a well-known fact that the independent repair service sector plays a significant role in the automobile industry. It consists of 1,700 independent parts manufacturers, 22,000 parts distributors, and 420,000 independent repair shops. Indeed, independent repair businesses perform over 80 percent of all service done in garages across the Nation. In addition, the individual carowner may do as much as 25 percent of all the service work done in the country. It would be ironic if, in our haste to control emission, we would threaten this distinctly independent element of the automobile industry.

Yet, there remains a great deal of apprehension that the present provisions of S. 3219 will not adequately protect the independent businesses and individual carowners from the threat of warranty invalidation.

For example, under S. 3219, the EPA is authorized under certain conditions to waive the prohibition against the conditioning of the performance warranty upon use of the automakers own parts and trained mechanics. Also, the long-term, 5-year/50,000 miles performance warranty is retained, even though a 5-year/50,000 miles production warranty is already in effect and provides adequate protection for the carowner.

The Bentsen amendment, on the other hand, would provide the changes that the independent service sector feels are necessary in order to successfully compete and provide alternative services to those offered by the automaker.

This amendment would require the EPA to establish procedures for certifying parts for warranty purposes, prohibit the manufacturer from invalidating the performance warranty when certified parts not produced by the manufacturer are used, amend the performance warranty to cover the first 18 months or 18,000 miles, and require the automaker to pay the carowner for emission control repairs performed on a vehicle which subsequently becomes the subject of a recall order. In addition, an FTC study is to be undertaken to study the anticompetitive effects of the performance warranty.

The certification procedure by EPA will, of course, help in the performance warranty validation process. However, the most controversial part of this amendment is the reduction in the length of the performance warranty from 5 years/50,000 miles to 18 months/18,000 miles. The reason for this reduction is that most carowners tend to take their new car back to the dealer for repairs within the first 18 months, and this time period should be adequate to insure that any needed adjustments can be made.

After 18 months, the work is usually done by independent repair shops. To require that the long-term, 5-year/50,000-miles performance

warranty be purchased would discourage independent service repair during this warranty period.

In closing let me make two points. First, this amendment really would not affect present warranty provisions, as the performance warranty is not currently being enforced, nor will it be enforced until after the EPA has authorized a prompt and reliable test for accurately measuring auto emissions.

Second, if the FTC study commissioned under this amendment shows that our concern over a longer performance warranty period is not justified, then the 5-year/50,000-mile provision will be reinstated.

#### AUTO PERFORMANCE WARRANTIES

MR. DOLE. The 1970 Clean Air Act established a 5-year or 50,000-mile performance warranty on an automobile's emission control system, to insure that all vehicles would meet clean air standards during their normal "useful life." This warranty program was never implemented, however, as no valid "in-use" emissions test has ever been developed. The Environmental Protection Agency is working to develop such a test, and once the warranty program is functional, an auto manufacturer will be required to repair any car that fails an emission inspection during the warranty period, provided it has been properly maintained.

Recognizing the possibility that this program may become functional in the foreseeable future, a number of independent parts manufacturers and repair shops have begun to express concern about the impact this provision may have on their own business. In fact, I have been contacted by a number of Kansans in recent weeks who have expressed genuine alarm about this matter. I share that concern and certainly feel that it would be unfair for the Federal Government to curtail the business of independent shops, either directly or indirectly, by requiring that routine maintenance during the warranty period be handled by auto manufacturers or their franchised dealers. While positive efforts must be made to insure that auto emission systems are durable, there must be, in my opinion, sufficient assurances that miscellaneous minor auto parts—such as spark plugs, air filters, and fuel pumps—can be routinely replaced by independent repair shops with appropriate equipment during the warranty period without endangering the effectiveness of the overall system warranty.

#### BILL PROTECTS INDEPENDENT REPAIR SHOPS

It is for this reason that I am pleased to see that the Public Works Committee has taken action to insure that no anticompetitive effect will occur under the performance warranty program. The committee has included language within the bill now before us that would require all owners' manuals to specifically advise the auto owner that routine maintenance does not have to be performed by a franchised auto dealer or with the manufacturer's own parts. The bill further declares that it is illegal to condition any warranty coverage on the use of a particular dealer's service and/or parts.

In addition, independent aftermarket parts manufacturers will be able to certify that their parts perform as well as the auto manufacturer's parts for routine repair purposes which do not endanger the warranty provisions. Earlier, after an initial study of the possible

impact of the 1970 Clean Air Act, the Federal Trade Commission recommended that these same provisions be enacted in order to prevent any "anticompetitive" impact under the performance warranty program. The Baker amendment, in effect, reinforces the provisions of the committee bill, and I support it.

In effect, these provisions, now contained in S. 3219, will prohibit any auto manufacturer from voiding a performance warranty on the basis that a replacement part was not made or installed by the manufacturer or a franchised dealer. The auto owner, in seeking proper interim maintenance of his car and its mechanical system, is neither forced nor encouraged to obtain that maintenance work at any particular service station. In fact, he can do the repair work himself, provided he uses replacement parts that have been certified as being of acceptable quality. And it is especially beneficial that the auto dealer must clearly indicate within the warranty itself that the carowner may use whatever parts and whatever form of service he wishes without destroying the emission system guarantee.

And, as added protection against any possible adverse effects on independent businesses, the Public Works Committee included a requirement that the Federal Trade Commission continue to study the "impact on competition" of the Clean Air Act warranties. The FTC is expected to hold hearings on the matter, at which any independent parts manufacturer or repair shop would be able to register complaints about the warranty program. The results of the FTC study are to be submitted to Congress within 18 months after passage of this bill. And at that time, if there is any reason to believe that this provision discriminates against small independent businesses, I would certainly join with my colleagues in the Senate in correcting that problem, based on clear and concrete evidence.

In the meantime, continuance of the 50,000-mile warranty period will help to protect the carowner against poor quality emission systems that would otherwise have to be repaired or replaced at the owner's expense; and it will also help protect the quality of our Nation's air from faulty emission control systems.

Mr. ROBERT C. BYRD. Mr. President, I ask unanimous consent that the second rollcall vote, being a back-to-back vote, be limited to 10 minutes.

The result was announced—yeas 45, nays 51, as follows:

[Rollcall Vote No. 425 Leg.]

YEAS—45

Allen	Glenn	Montoya
Bartlett	Goldwater	Morgan
Bentsen	Griffin	Moss
Bumpers	Hansen	Nunn
Byrd, Harry F., Jr.	Hart, Gary	Randolph
Byrd, Robert C.	Hart, Philip A.	Scott, William L.
Cannon	Helms	Sparkman
Chiles	Hollings	Stennis
Curtis	Hruska	Stevenson
Domenici	Huddleston	Stone
Eagleton	Johnston	Symington
Eastland	Laxalt	Taft
Fannin	Long	Talmadge
Ford	McClure	Tower
Garn	McGee	Young

## NAYS—51

Baker	Gravel	Muskie
Bayh	Hartke	Nelson
Beall	Haskell	Packwood
Bellmon	Hatfield	Pastore
Biden	Hathaway	Pearson
Brock	Humphrey	Pell
Brooke	Inouye	Percy
Buckley	Jackson	Proxmire
Burdick	Javits	Ribicoff
Case	Kennedy	Roth
Church	Leahy	Schweiker
Clark	Magnuson	Scott, Hugh
Cranston	Mansfield	Stafford
Culver	Mathias	Stevens
Dole	McClellan	Thurmond
Durkin	McGovern	Weicker
Fong	McIntyre	Williams

## NOT VOTING—4

Abourezk	Mondale	Tunney
Metcalf		

So Mr. Bentsen's amendment (No. 1614, as modified) was rejected.

Mr. BAKER. Mr. President, I move to reconsider the vote by which the amendment was rejected.

The PRESIDING OFFICER. The question is on agreeing to the amendment of the Senator from Tennessee.

The legislative clerk called the roll.

The result was announced—yeas 97, nays 0, as follows:

[Rollcall Vote No. 426 Leg.]

## YEAS—97

Abourezk	Glenn	Morgan
Allen	Goldwater	Moss
Baker	Gravel	Muskie
Bartlett	Griffin	Nelson
Bayh	Hansen	Nunn
Beall	Hart, Gary	Packwood
Bellmon	Hart, Philip A.	Pastore
Bentsen	Hartke	Pearson
Biden	Haskell	Pell
Brock	Hatfield	Percy
Brooke	Hathaway	Proxmire
Buckley	Helms	Randolph
Bumpers	Hollings	Ribicoff
Burdick	Hrusha	Roth
Byrd, Harry F., Jr.	Huddleston	Schweiker
Byrd, Robert C.	Humphrey	Scott, Hugh
Cannon	Inouye	Scott, William L.
Case	Jackson	Sparkman
Chiles	Javits	Stafford
Church	Johnston	Stennis
Clark	Kennedy	Stevens
Cranston	Laxalt	Stevenson
Culver	Leahy	Stone
Curtis	Long	Symington
Dole	Magnuson	Taft
Domenici	Mansfield	Talmadge
Durkin	Mathias	Thurmond
Eagleton	McClellan	Tower
Eastland	McClure	Weicker
Fannin	McGee	Williams
Fong	McGovern	Young
Ford	McIntyre	
Garn	Montoya	

## NAYS—0

## NOT VOTING—3

Metcalf

Mondale

Tunney

So Mr. Baker's amendment No. 1586 was agreed to.

### NONSIGNIFICANT DETERIORATION [Sec. 160]

Mr. TUNNEY. Clearly the clean air amendments which we are considering today embody the most important environmental legislation in the 2d session of the 94th Congress. These amendments are the first of the so-called second generation environmental laws. Six years ago the Congress plotted a bold path for improving and protecting the quality of the air we breathe. The experience of 6 years of program development and implementation have revealed the need for significant midcourse corrections in specific areas of the Nation's clean air program. However, the ultimate goal of articulating policies designed to protect public health and welfare through the establishment of ambient air quality standards has never been seriously questioned.

Section 6 of the Clean Air Amendments of 1976 (S. 3219) contains language that would prevent the significant deterioration of areas where air quality is presently cleaner than the existing standards. As we are all aware, this provision has become the focus of congressional debate relating to the future of the Clean Air Act.

### HISTORY

Although the issue of significant deterioration is highly controversial, it is not particularly new. Nondegradation policy was first articulated in 1967 in both the Federal water pollution control law and the Air Quality Act. Section 101(b) of the Clean Air Act of 1970 states the intent of Congress:

To protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population.

The air pollution control strategy set forth in the 1970 Act gave careful consideration to the need for cleaning up dirty areas. However, it largely overlooked the need to develop a clear and workable policy to protect our Nation's vast clean air regions. Nevertheless, it is most certainly not the intent of Congress to allow our remaining clean air resources to degenerate to the minimum ambient air quality standards defined in the law.

Since the Clean Air Act of 1970 does not explicitly require regulations for the prevention of significant deterioration of air quality, requirements to implement this policy were deleted from EPA's guidelines in 1971. Subsequently, 20 States—including California—joined the Sierra Club or submitted independent suits requesting the courts to require a nondegradation policy. The act was interpreted by the courts—Sierra Club against Ruckelshaus—to require EPA to promulgate such regulations for protection of pristine areas. This decision was affirmed by the U.S. Supreme Court on June 11, 1973. As a result, EPA promulgated regulations to prevent significant deterioration of

air quality on December 5, 1974. The Supreme Court decision has not only set in motion the regulatory machinery at EPA, it has also created a situation that has been characterized by litigation and confusion.

#### NEED FOR CLARIFICATION

The uncertainties and confusion precipitated by the EPA non-degradation regulations clearly reveal the need for Congress to settle the issue once and for all. Environmentalists, leaders of industry, and public officials are united in their demands that Congress clarify the situation. The United Steelworkers of America contend that:

If there is an argument that economic growth can be constrained because of the significant deterioration issue, it is because the issue has been clouded by uncertainty as to the specifics of that policy.

The administration also asked Congress to address this issue when it submitted the Clean Air Act Amendments of 1974.

One key question that is inherent in the debate surrounding the amendments introduced by Senator Moss is: What policy will the Nation have for the next 2 years—a bureaucratic/judicial policy or a congressional policy? In answering this question an important consideration must be taken into account:

If the Moss amendment passes, the court-ordered EPA regulations will remain in effect, and litigation pending against those regulations will continue to cloud long-range prospects regarding the construction of major industrial facilities for years to come.

#### NEW SENATE PROVISIONS

Stated simply, S. 3219 provides that areas where air quality is presently cleaner than the existing standards must be protected by nondeterioration standards. Only two pollutants—sulfur oxides and particulates—are to be governed by a defined numerical increment. The increments are amounts of new pollution which may be added by new facilities to existing air quality.

The most carefully protected areas are to be designated as class I areas. All other areas shall be class II areas. The decision regarding classification is basically a State decision. In addition, all international parks, national parks, and national wilderness areas which exceed 5,000 acres in size shall be designated a class I area.

The increments only apply to major sources which emit more than 100 tons of sulfur oxides and particulates. The provision is further restricted to apply to only the 28 types of point sources identified in the bill. Other pollutants from major emitters are to be governed by a permit process which will require the use of "best available control technology." Best available technology is defined as the maximum pollution reduction technologically achievable, as determined by the State on a case-by-case basis for each facility to be constructed in a class II area.

In my own State of California, Gov. Edmund G. Brown, Jr., and the California Air Resources Board—ARB—support a strong Clean Air Act. The chairman of the ARB has stated that:

The enactment of a clear statutory mandate governing significant deterioration of air quality and setting allowable ceiling will be an important step in allowing

us to keep the air clean where it is already clean, rather than implying that we wait until air quality deteriorates before taking necessary action. The provisions allowing more state control over air quality associated with federal lands and over classification will give state plans greater comprehensiveness and flexibility in meeting the strict standards.

As I understand them, the Moss amendments will delete the nondeterioration section from the bill for the purpose of studying it for 1 year. The commission set up by the bill itself, to review air quality standards, will make that study and report to the Congress within 1 year from the date of enactment of S. 3219.

As you know, the Public Works Committee argues that ongoing studies of implementation should be conducted, but extensive studies—my colleague, Senator MUSKIE, has cited 44 relevant documents—already exist analyzing nondegradation policy and options.

Furthermore, the committee has held specific hearings on nondegradation in 1973, 1974, and 1975. In 1975, 14 days of hearings were held and 48 markup sessions were conducted. Representatives from California have had ample opportunities to participate in an active dialog with my friends on the Public Works Committee.

State officials in California have expressed a strong interest in preserving the nondegradation provisions that have been developed by the committee. In addition, California State air pollution control efforts would benefit greatly from the committee provisions which will grant "more State control over air quality associated with Federal lands and over classification" of various air quality regions.

For these reasons, I am greatly concerned by the fact that the Moss amendments would result in: Continuation of the requirement that new facilities in clean air regions obtain Federal permits; continuation of the authority of Federal land managers to unilaterally designate any Federal lands as class I without concurrence by States; continuation of the 60-100-mile buffer zones around any such class I area; continuation of Federal authority to reject any State efforts to gain control of this program; and continuation of uncertainty caused by lack of congressional policy on this issue.

On the other hand, as my colleague from Maine explained, the committee provisions would result in State rather than Federal permits for new major facilities, and State authority to issue or deny permits for facilities even when such facilities are located on Federal land; no designation, except by statute, of any areas as class I without concurrence of the State; and, elimination of Federal authority to second-guess State efforts to control this program except through judicial proceedings with a Federal burden of proof.

#### PUBLIC MISUNDERSTANDINGS

I have spent a great deal of time discussing this important issue with many of my constituents in California. Those discussions revealed a tremendous amount of public misunderstanding and apprehension about the issue of significant deterioration. One constituent told me:

The "non-degradation" provisions, as I understand them, would provide that no industrial growth could take place that would result in a lesser quality of air in that area regardless of how high the quality of the air might be.

Another California resident expressed the belief that:

There have been no hearings on the non-degradation provisions of the Clean Air amendment. The facts regarding the provisions and the far-reaching results of them, if passed, are not known.

Another Californian expressed the concern that:

The non-deterioration provisions would, if passed, have very serious effects on the economy, economic growth would be dampened in most areas of the country, if not stopped entirely.

Still another constituent told me:

The solution represented by section 6 of the bill is an arbitrary Federal imposition of land use control which cannot be justified on any scientific basis.

These anxieties are endemic of the serious misconceptions which I repeatedly heard during my travels throughout California. Certainly if these charges were valid, I would do anything within my power to bring about the resounding defeat of the committee's bill. However, careful study has led me to conclude that the committee provisions are defined in sufficiently narrow terms, and do not curtail allowable activities in a way that will be detrimental to future economic and industrial growth.

I am convinced that section 6 will not trigger economic depression and higher levels of unemployment.

It is important to remember that the nondegradation provisions do not apply to all development, but only a select number of the major stationary industrial sources. The California Air Resources Board has informed me that 7 of the 19 designated source-types cannot even be found in California—these include: Coal cleaning plants; primary aluminum ore reduction plants, primary copper smelters, municipal incinerators charging 250 tons per day, phosphate rock processing plants, fuel conversion plants, and ferro-alloy plants. Thus, contrary to widespread public belief, activities such as construction, farming, light manufacturing, and residential development are not affected by the nondegradation provision.

The charge that the significant deterioration language constitutes a de facto Federal land use policy based solely on the criteria of air quality seems to me to be totally unfounded. S. 3219 embodies provisions that give the States the authority to make their own determinations of what significant deterioration is allowable within a framework of defined air quality increments. Furthermore, the nondegradation provision requires the States to consider and balance their various objectives, with full public participation.

#### ALLOWABLE ACTIVITIES

An EPA analysis of the impact of the Senate significant deterioration proposal explains in very clear terms what industrial activities will be able to continue in class II areas. This analysis was especially enlightening when taken in the context of the abundant misunderstanding and misrepresentation that has characterized the public debate on nondegradation.

I would like to quote several provocative excerpts from the EPA analysis:

# SUMMARY OF EPA ANALYSIS OF THE IMPACT OF THE SENATE SIGNIFICANT DETERIORATION PROPOSAL

## INTRODUCTION AND CONCLUSIONS

### A. Introduction

A major purpose of the Clean Air Act of 1970 is "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." The Act is administered by the U.S. Environmental Protection Agency (EPA) and has been interpreted by the courts as barring the degradation of air in areas that are cleaner than the National Ambient Air Quality Standards.

The Senate significant deterioration proposal allows for the allocation of major industrial sources. Specifically, the minimum required separation distance for economically sized facilities meeting Federal New Source Performance Standards (NSPS) or an equivalently defined control level is 0 to 40 miles for power plants, 0 to 12 miles for kraft pulp and paper mills, 0 to 3 miles for oil shale plants, 0 to 30 miles for gasification plants, 0 to 18 miles for refineries, and 5 to 16 miles for copper smelters. If control beyond NSPS is assumed, the separation distances are reduced to 0 to 31 miles for power plants, 0 to 8 miles for paper mills, 0 to 6 miles for gasification plants, and 0 to 10 miles for refineries.

### ESTIMATED SIZE OF MAJOR INDUSTRIAL FACILITIES THAT CAN BE CONSTRUCTED UNDER SENATE PROPOSAL

#### 1. Coal-Fired Power Plants—

Between an 1100 to greater than 4000 mw coal-fired power plant meeting New Source Performance Standards (NSPS) could be built in areas of flat or moderate terrain (i.e., where the surrounding terrain is below the top of the stack).

#### 2. Petroleum Refineries—

EPA's analyses show that refineries in flat or moderate terrain will not be constrained by the Senate Class II increment. Assuming compliance with NSPS, one 300,000 bbl/d fuel oil refinery and two 300,000 bbl/d gasoline refineries could be built at one site. If control beyond NSPS is assumed (i.e., .3% oil), two 300,000 bbl/d fuel oil refineries and three 300,000 bbl/d gasoline refineries could be built at one site.

#### 3. Synthetic Fuel Plants—

EPA's analyses show that in areas of flat or moderate terrain typical size oil shale (50,000 bbl/d) and gasification plants (250 mmcf/d) would not be constrained by the Senate Class II increment. In fact, it would be possible to put several oil shale and gasification plants at one site without violating the Senate Class I increments for sulfur dioxide.

#### 4. Kraft Pulp and Paper Mills—

EPA's analyses show that at least two 1000 ton per day kraft pulp and paper mills meeting NSPS with on-site coal-fired generation could be constructed in areas of flat or moderate terrain. Since most kraft mills burn fuels with much lower sulfur content than coal, this analysis is extremely conservative.

Unbleached mills have much lower emissions and would be significantly less restricted. In view of the fact that the typical size for new paper mills is about 1000 tons per day and 400 tons per day for expansions at existing sites, it can be concluded that the Senate proposal will not prevent the construction of economically efficient kraft pulp and paper mills.

### MINIMUM REQUIRED SEPARATION DISTANCE BETWEEN MAJOR INDUSTRIAL FACILITIES UNDER THE SENATE PROPOSAL

#### 1. Coal-Fired Power Plants—

More than two 1000 plants meeting NSPS could be constructed at one location in areas of flat terrain. In moderate terrain, two 1000 mw new plants would have to locate up to 28 miles apart in order not to violate the Senate Class II increments.

#### 2. Petroleum Refineries—

The Senate proposal probably will not constrain the collocation of new refineries.

#### 3. Synthetic Fuel Plants—

In areas of flat or moderate terrain, several oil shale or gasification plants could be built at one site without violating the Senate Class II increments.

#### 4. Pulp and Paper Mills—

Since most new paper mills are projected to be located in remote areas, it can be concluded that the collocation of new mills will not be affected by the Senate proposal.

I submit that these EPA findings illustrate that the significant deterioration provisions incorporated in S. 3219 will not preclude necessary and desirable future economic and industrial growth. At the same time, the nondegradation provisions will protect the integrity of our Nation's clean air program.

#### CONCLUSION

After careful consideration of the Public Works Committee approach to the problem of nondegradation, and after comparing it to the alternative offered by Senator Moss, I have come to a firm conclusion. I am now convinced that rather than harming industrial and economic growth, the significant deterioration provisions will channel growth into areas that will not require after-the-fact regulation, and possibly dislocations at a later time. I feel strongly that provisions guaranteeing prevention of significant deterioration must be included in the amendments to the Clean Air Act.

Mr. HOLLINGS. I would remind my colleagues of the importance in resolving the controversy over emission levels. We must act soon and we must keep in mind the lead times needed by the automotive industry in planning for their new models, and the interrelationship between emission levels and fuel economy standards.

Last December we passed the Energy Policy and Conservation Act and included therein was the establishment of fuel economy standards for automobiles, setting the actual standards for model years 1978, 1979, and 1980. From the origins of this provision in the Senate Commerce Committee, we have recognized the interrelationship between auto emissions and fuel economy. Accordingly, the law provides for an adjustment mechanism whereby manufacturers may apply for an adjustment in the fuel economy standards if emissions or safety or damageability standards had the effect of significantly reducing fuel economy.

Nineteen hundred and seventy-eight is the first year these fuel economy standards are in effect. Although both the Senate Public Works Committee and the House Commerce Committee have recognized that the emissions levels presently in the law for the 1978 model year are not appropriate, the Congress has yet to approve new levels for the 1978-80 model years. I think it is important for the Senate to recognize—particularly those of us who are responsible for the passage of the fuel economy bill—that it is virtually impossible for manufacturers to plan vehicles for those years without knowing what the emission levels will be.

Emission levels should parallel the same time frame as those fuel economy standards established in the law. The Senate Public Works bill would do this because it sets standards for the time period 1970-80. It is important that the Senate not deprive the auto manufacturers of this advanced knowledge of the levels and timetables, because to do otherwise could impair the achievement of the goals of the Energy Policy and Conservation Act for those years. If our action does not resolve the levels for those model years, manufacturers will have to

continue planning at several possible emission levels—inevitable detracting from, and adding cost to, their efforts to meet the fuel economy law. If they fail, our goals for energy conservation will not be realized.

Additionally, because of the interrelationship between these two sets of standards, it seems totally inappropriate to alter the decisions of the Public Works Committee with respect to the 1978 model year, as Senator Hart's amendments would do, because we have already passed the time when automakers should have begun the certification process for that model year. To change the 1978 model year standard at this time would delay certification, increase consumer costs, and adversely affect fuel economy, since manufacturers would be deprived of the needed development time in which to optimize certified engines for fuel economy.

The automobile industry and its employees need an answer now and they need an answer which recognizes the timing realities of their industry. The opportunity to tinker with 1978 emission levels has passed unless in doing so you are willing to jeopardize conservation of fuel. I believe that this is not an appropriate trade off because of the importance in moving forward as quickly as possible on the fuel economy front. To tamper with 1978 emission levels would be a serious and unwarranted blow to fuel economy. We have made significant strides in the area of auto emissions. I applaud them, and in addition, I commend the Public Work Committee for reporting to us a bill which responsibly addresses the trade offs between emission levels and fuel economy standards.

Mr. NELSON. The amendment (No. 2078), which was submitted in the Record July 23, 1976 (page 12297), aims at banning specific propellants in aerosol containers, unless the EPA finds that their continued use poses no unreasonable risk of injury to health or the environment.

The modifications in this amendment are as follows:

The ban would take effect by January 1, 1978, instead of January 1, 1977;

No congressional review would be required if EPA ruled to modify or lift the ban.

This modified amendment differs from an amendment intended to be offered by Senator Packwood in the following way:

It provides that EPA base a decision on banning the propellant substances on whether the substances poses "an unreasonable risk of injury to health or the environment."

The Packwood amendment bases the decision on whether the substances pose a "significant risk to the public health, safety, or welfare."

In determining whether a substance poses an "unreasonable risk," it is necessary that benefits be weighed against risks.

In finding that something poses a "significant" risk, benefits need not be taken into consideration.

That is the major difference between the two approaches.

There is precedent for the "unreasonable" criteria in:

The Pesticides Act;

The Safe Drinking Water Act;

The Medical Devices Act; and

The toxic substances bill as it passed the Senate, including a section banning the use of PCB's—an amendment that I offered on the floor.

The Pesticides Act—Federal Insecticide, Fungicide, and Rodenticide Act—contains the following definition of “unreasonable adverse effects on the Environment”—section 2, definitions, (bb) :

The term “unreasonable adverse effects on the environment” means any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide.

The report on the Toxic Substances Control Act by the House Interstate and Foreign Commerce Committee—page 14—aptly describes what is intended by the definition of “unreasonable risk,” in a manner consistent with the intent of this legislation. It states:

In general, a determination that a risk associated with a chemical substance or mixture is unreasonable involves balancing the probability that harm will occur and the magnitude and severity of that harm against the effect of proposed regulatory action on the availability to society of the benefits of the substance or mixture, taking into account the availability of substitutes for the substance or mixture which do not require regulation, and other adverse effects which such proposed action may have on society.

The amendment to ban the use of fluorocarbon propellants, which scientific evidence indicates deplete the Earth's protective ozone layer and thereby cause more skin cancer, is not intended to:

Undercut ongoing scientific studies. In fact, the amendment relies on the scientific evidence. Nor is it intended that more harmful substances would be allowed as substitutes. If it were found that proposed substitutes were more hazardous, EPA should continue to allow the less risky substances.

This amendment is patterned after the precedents cited above. It is a reasonable approach to addressing this important environmental problem, in my view.

#### AMENDMENT No. 2104

On page 58, beginning with line 2, strike out all through line 7 on page 59 and insert in lieu thereof the following:

“SEC. 153. (a) On and after January 1, 1978, except as provided in subsections (b) and (c), it shall be unlawful for any person to manufacture, produce, import, export to or from the United States, or sell in commerce any aerosol container containing as a propellant trichloromonofluoromethane, difluorodichloromethane or any other saturated chlorofluorocarbon compound not containing hydrogen, unless the Administrator finds, by rule, prior to such date, on the basis of a study by the National Academy of Science and other available scientific information, that no unreasonable risk to the public health or the environment results from any or all uses of such containers containing such propellants.

“(b) (1) Any person may petition the Administrator to modify or rescind the prohibition in subsection (a) in whole or in part, by presenting new scientific evidence showing that such change in the prohibition presents no unreasonable risk to the public health, safety, or welfare posed by the discharge of trichloromonofluoromethane, difluorodichloromethane or any other saturated chlorofluorocarbon compound not containing hydrogen into ambient air from aerosol containers.

“(2) In determining whether to modify or rescind such prohibition pursuant to subsection (a), the Administrator shall consider new scientific information, available reports, and any other material as he deems necessary, and consults with appropriate Federal agencies and scientific entities, and afford the opportunity.

“(3) If he then finds that no unreasonable risk to the public health, safety or welfare is, or may be, posed by the discharge of trichloromonofluoromethane, difluorodichloromethane or any other saturated chlorofluorocarbon compound not containing hydrogen into the ambient air from aerosol containers, he may

by rule modify or rescind the prohibition in subsection (a) in whole or in part, consistent with that finding.

"(c) If the Administrator determines that a particular use of trichloromonofluoromethane, difluorodichloromethane or any other saturated chlorofluorocarbon compound not containing hydrogen in aerosol containers is essential for the public health or welfare, and that an adequate substitute for such compound is not available, he may by rule grant exemptions from the prohibitions in subsection (a) to allow the use of small quantities in such particular case.

"(d) The Administrator shall by rule prohibit manufacturers or importers of aerosol containers containing trichloromonofluoromethane, difluorodichloromethane or any other saturated chlorofluorocarbon compound not containing hydrogen from stockpiling (within the meaning of section 9(d)(2) of the Consumer Product Safety Act (15 U.S.C. 2058(d)(2))) any such containers so as to prevent such manufacturers or importers from circumventing the purpose of this section.

"(e) (1) From time to time the Administrator may revise any rules issued pursuant to subsection (b)(3) of this section in light of new evidence as to the need for such regulations, subject to approval by the Congress as provided in such subsection (b)(3).

"(2) From time to time the Administrator may revise any of the rules issued pursuant to subsection (c) and (d) of this section in the light of new evidence as to the need for such regulations.

"(f) Nothing in this section shall limit, restrict, or otherwise detract from the authority provided in section 154, or any authority vested in the Consumer Product Safety Commission, or any health-related authority vested in the Secretary of Health, Education and Welfare.

On page 59, line 10, strike "1978" and insert in lieu thereof "1977".

## SENATE DEBATE ON S. 3219, JULY 29, 1976

### CLEAN AIR AMENDMENTS OF 1976

The ACTING PRESIDENT pro tempore. The Senate will now resume consideration of S. 3219.

A bill (S. 3219) to amend the Clean Air Act, as amended.

The Senate resumed consideration of the bill.

The ACTING PRESIDENT pro tempore. The pending question is the amendment of the distinguished Senator from West Virginia (Mr. RANDOLPH), No. 1798.

Mr. MUSKIE. I have been trying since last April, and I have agreed to postpone bringing up the Clean Air Act time and time again, several times out of deference to the Senator from Utah, and I have tried to reach an agreement on time when we could deal with the Moss amendment first. That was not possible. So the bill was finally brought up on Monday.

There was nothing but talk on Monday. Then Tuesday came and the leadership pressed me, not the Senator from Utah, to get amendments up and to get them disposed of in order to get the bill moving. The Senator from Utah made it quite clear to me that he did not want his amendment brought up until Wednesday, and so I scurried around looking for other amendments, noncontroversial amendments, that had been pending at the desk that I could dispose of to fill the time on Tuesday so that I could accommodate the Senator from Utah on Wednesday.

We disposed of three Domenici amendments, proceeded in due course to the Randolph amendment which, as far as we knew, was noncontroversial, and a mere study, and the Senator from Utah chose to interpret that move as an assault upon his position, which was not the intention whatsoever, and I still do not regard it as an assault on the position of the Senator from Utah.

So whatever delay that has been occasioned has been occasioned because the Senator from Utah interpreted the laying down of the Randolph amendment as a precipitation of the nondegradation issue, which is was not at all.

So I just want to make the record eminently clear that this Senator is not responsible for the delay I tried to accommodate in every way I could the wishes and the prerogatives of the Chairman of the Public Works Committee, Senator Randolph, who presented an amendment in all good faith, and has a right to have his amendment voted up or down, just as the Senator from Utah has.

So far as I am concerned, I do not see anybody's rights as being prejudiced if we have a vote on the Randolph amendment, proceed to the Moss amendment and dispose of it.

Mr. Moss. The manager of the bill jumps up and constantly interrupts, when any statement is made, that he wants to correct the record.

He knows as well as I know that the Moss amendment was the focus of the debate that had to be determined in this matter to see where we were going to go on the Clean Air Act amendments, and he knows as well as I that it was his suggestion, to which I agreed, that I would go over until Wednesday so that we could take it all in and, perhaps, dispose of it in one session and not chop it up.

He knows as well as I that we got into this parliamentary morass because the Randolph amendment was projected into the debate before we had any general debate on degradation and the study before any orderly discussion of the Moss amendment, which all the Senators here had been expecting.

I quote the leader yesterday. He said:

I did visit a number of Senators, but the uniform answer was that they were waiting to see what happened to the Moss amendment.

So the Moss amendment is the key to the whole process.

I would like to get on with my amendment. I cannot see why the manager of the bill and the chairman of the Public Works Committee are reluctant to get on to the key of this debate. The Moss amendment has been the focus of the debate for over 4 months. All of my colleagues are aware that there are two parts to the Moss amendment, a study and a deletion of section 6 while the study is being made.

The Randolph amendment surfaced within days after my amendment was first printed, and it is clearly on its face an attempt to copy part of my amendment, and it confuses the issue. But the Randolph amendment is a weak substitute on the study section, and it fails to meet the issue.

So I would want to get the study section coupled with the suspension of section 6.

I find the delay of the managers to get to the bill, the heart of this bill, regrettable. And, indeed, the Senator talks about the right of the chairman of the Public Works Committee, which is his right, I will agree, to present an amendment and to hope that he can get a vote on it. But I am within my rights, to say if we are going to dispose of this in an orderly manner, let us get to the Moss amendment. Let us vote it up or down. If it is voted down, that is fine. If it is voted to pass, and the Moss amendment becomes part of the bill, that is fine, too, and that is what this body should proceed on and not find itself snarled, as it is now.

But I can say, having worked on these amendments for months, and in consultation with many, many people, not only in my own State but many others, that this is the key to the bill that is before us. If we do not get to the Moss amendment and have it disposed of in an orderly manner then we will probably have no bill, and I would regret that, too, because I think there are parts of that bill, in fact, the main thrust of the bill, that are good, and I agree with them, and I would hate to see the whole bill go down just because we cannot get to the nondegradation plus a study to see whether or not we are going to go in that direction now.

I would expect to have some rather extensive remarks yet to make on this subject and on this bill.

We put ourselves into an impasse where we are not going to get anyplace unless they let us come to the issue that is the basic issue now before the Senate, whether or not we are going to have nondegrada-

tion written into the law before any study is made or whether we are going to hold it out of the law until a study is made. It is that simple.

Mr. ALLEN. There is no disposition on the part of the Senator from Alabama to prevent a vote on the Moss amendment. As a matter of fact, yesterday I proposed that if the Moss amendment is allowed to be the pending business, I would be willing to agree to a time limit, a reasonable time limit on the Moss amendment, because I am persuaded, just as is the Senator from Utah (Mr. Moss), that the Moss amendment is the critical issue and the critical point in this entire matter.

The Senator from Maine has stated that section 6, the nondegradation, is something that lightens the load on environmental matters.

It is something that benefits a business, an industry. But if this is a benefit to business and industry, I would hate to see a detriment to business and industry.

At some point in the proceedings, the Senator from Maine said something about his preference just to continue the present environmental position and not go forward with this.

I think that might be a proper solution in this matter. There are at least two aspects to the bill. One is the automobile emissions and then the nondegradation feature of the bill.

I think we might well split the bill off and go forward with the emissions section and abandon the nondegradation.

The parliamentary situation is such that with the Randolph amendments, providing for enacting section 6 and then, after enacting it, studying whether it is good or bad and in what way it is bad, that amendment, since this is the pending amendment, prevents the Moss amendment coming up and being voted up or down.

It would seem to me that the matter is pretty simple. There is no resistance whatsoever to having a vote up or down on the main question in the bill, and that is whether the nondegradation section will be enacted before the study.

What comes first, the chicken or the egg? Are we going to enact section 6, as the Randolph amendment would provide, and set up a study commission to study whether it is a good thing or not, or will we go the Moss amendment route and have a study to see whether the nondegradation provisions of section 6 should be enacted?

To me, that is a simple issue. Let us study and then enact, rather than enact and then study. That is the issue between Randolph—and when I say Randolph, I refer to the amendment—that is the issue as between Randolph and Moss.

The Randolph amendment says, "enact and then study."

The Moss amendment says, "study and then enact in the light of that study."

I feel that the reasonable approach to that would be to study and then enact, because if we enact and then study, we can well find that what we have enacted is no good, that we need a different approach, that the goals are unattainable, that the goals put too heavy a burden on business and industry, that it would cause the loss of jobs, that it would cause great economic hardship in particular areas, that it would provide for a nogrowth policy for many areas throughout the country.

So after we have enacted legislation and then find out what we have done is bad, how are we going to rectify the matter?

It would take more legislation. All the while, we have a statute already enacted, the Commission perhaps saying that this is not advisable, we made a mistake, we ought to amend it in this fashion or that fashion.

But under the present situation, we are not allowed to consider the Moss amendment up or down. If that question could be resolved, there is no reason whatsoever we could not proceed in an orderly fashion to dispose of this bill in a matter of 1, 2, or 3 days.

I am willing and the Senator from Utah is willing to set a time limit on the Moss amendment, set a time limit on amendments to the Moss amendment. If we want action, that is the way to get it.

Why not decide the central question first, the question that has been considered and debated backward and forward for months and that has been recognized as being the chief, salient feature of this entire controversy?

Why shunt it off to the side and say, "Let's take up something else?"

It looks as if it might be just a little bit of obstinacy on both sides of this issue. But if we can decide the whole thing up or down on one vote, why is that not the practical way to approach this issue?

The Moss amendment has been held as not being in order as to the pending amendment No. 1798 by the senior Senator from West Virginia (Mr. Randolph).

The Moss amendment, therefore, has to wait in the wings until some disposition is made of the Randolph amendment.

Since the Moss amendment was not in order as an amendment to the Randolph amendment, it occurred to the Senator from Alabama that it might be advisable or in order to offer an amendment to the Randolph amendment that would be a somewhat middle ground as between the Randolph amendment approach and the Moss amendment approach, and an amendment that would be in order and come just as close as possible to the Moss amendment.

I have no hesitancy in saying that I prefer the Moss amendment over my own amendment, even though I wrote my amendment and did not write the Moss amendment. I prefer his. But we cannot at this time get a vote on his and we can get a vote on the amendment that I have prepared.

What is the gist of the amendment that I have prepared? I want to analyze some of the issues before the Senate.

My amendment is printed amendment No. 2101. I had thought that I would offer the amendment at the conclusion of my remarks. I hesitate to offer the amendment because it might hamper efforts to bring up the Moss amendment. As soon as I offer the amendment and yield the floor, it is subject to a motion to table. That would have a vote by the Senate on what we might call a quasi Moss amendment. It is not what the Moss amendment provides, but it is in that general direction.

What amendment No. 2101 provides is that we will accept the Randolph approach on the Commission; that the mandate given to the Commission under the Randolph amendment, the composition of that Commission, the work that they are to do, and the study they are to perform would be the plan advanced by the Senator from West Virginia. So we preserve, in amendment No. 2101, the Randolph concept on the work of the Commission.

One of the functions of the Randolph Commission would be to study the implementation of title VI, which is subsection (g) that is added to section 110 of the act. The Commission is to study the implementation of section 6 in the bill.

This proposed amendment adds a two-faceted proviso is only eight lines long. Though it is all in one sentence there are two distinct aspects of the amendment. The first aspect, would say, in effect, "Yes, go ahead and enact section 6." the nondegradation, that the Moss amendment would not enact. The Moss amendment would strike out section 6 but the Randolph amendment would allow section 6 to be enacted.

I am joined in this amendment by the Senator from Florida (Mr. Stone).

My amendment would provide for enacting section 6, just as the Randolph amendment does. It would provide for this study. But the implementation and enforcement of section 6 would be stayed, held, or delayed for 1 year after the report of the Commission set up by the Senator's amendment.

I hope Senator from West Virginia will look with favor on this amendment because it does no violence whatsoever to his concept, I will say to the distinguished Senator. It sets up the Commission that he sets up. It gives the mandate that the Senator wishes. It merely delays the coming into effect of section 6 for 1 year following the report.

That would give the Congress a 1-year period to consider these recommendations. If certain aspects of section 6 were found by the Commission to be inadvisable or punitive, or as being adverse to the economy, then the Congress would have 1 year in which to modify section 6 before it goes into effect.

MR. RANDOLPH. Is it the understanding of the Senator from West Virginia that if the amendment to which the Senator now addresses himself were acceptable to me in connection with the pending amendment, he would withdraw his endorsement of the Moss amendment?

MR. ALLEN. No, sir, it does not. I would still be for the Moss amendment. As far as I am concerned, however, it would allow the Randolph amendment to come to a vote, if this is accepted.

It goes one step farther. This is not absolutely necessary on the bill as I have two other amendments on the bill, one having one aspect of this amendment and the other one having the other aspect. This amendment combines the two provisions.

The second provision is not absolutely necessary, to my mind. I prefer it, but if we could get action on the first aspect, the one-year suspension, we might say, of section 6, one year after the commission makes its report, then I would not necessarily insist upon the other, because the other aspect provides that after the commission makes its report, then no provision of section 6 that is in contravention to the recommendations of the commission could be implemented or enforced.

So that would be a permanent suspension of whatever provisions of title VI were in contravention to the committee's recommendation. But if we could get general agreement on the first aspect of this amendment, I would certainly be willing to see it come to a vote, and, if adopted, I would be willing to vote for the Randolph amendment if it comes up, up or down on the Randolph amendment.

Mr. RANDOLPH. But still the Senator reaffirms that even if that happened, the Senator would continue his support of the Moss amendment?

Mr. ALLEN. Of the Moss amendment; but I call to the Senator's attention that once this is in the bill, the Moss amendment would not touch this provision. If it were added, it would just be an additional appendage on the bill, and would in no way strike out what the Senate had done with respect to adopting the Randolph amendment. It would not supplant the Randolph amendment.

It would be there, and the Moss amendment would also be there, and it would be up to the conference to go one route or the other.

Mr. RANDOLPH. If the amendment I have offered would contain the provision which is sponsored by the Senator, and that was passed, and later the Moss amendment were defeated in this body, would the Senator then support the measure?

Mr. ALLEN. I might not support the measure, but I would certainly hope for an early vote on the measure.

I do think this would definitely improve it, and I believe the Senator recognizes that it would be well to stay the enforcement of section 6 until the commission has made its report, and give to Congress a 1-year period to comply with the recommendations of the Commission. I believe this is in line with the Senator's thinking. I hope that I could enlist his aid on this amendment.

May I turn the tables and ask the Senator if he things well of this approach? I mean would this possibility be acceptable to him?

Mr. RANDOLPH. Well, not at the moment.

Mr. ALLEN. I see.

Mr. RANDOLPH. Because at the moment I determine that the Senator is going to be, I believe, against the bill if the Moss amendment is not contained therein.

Mr. ALLEN. I am going to be against it, but my efforts against it would be diminished.

Mr. RANDOLPH. You mean the strident attack you are now making would be modified to a timid approach?

Mr. ALLEN. No. I would hope it would come to an early vote.

And I hope that when the Senator from Alabama concludes his remarks, he will have enlisted the support of the distinguished Senator from West Virginia, because I think that would be decisive of the matter. If the Senator from West Virginia would support the amendment. I believe we could have an early vote on it, and move on to something else.

And I would say this: Though possibly I should not give my personal assessment of it. I would think that if the Randolph amendment as amended by the amendment of the Senator from Alabama were agreed to, I would say that would greatly lessen and greatly reduce the chances of the passage of the Moss amendment, and I believe the Senator realizes that is correct. So if we get this amendment adopted and the Randolph amendment adopted, I believe that would pretty well bring the matter to a close.

I reiterate, as the Senator asked me to, that I do continue to support the Moss amendment as being a much better approach than the amendment of the Senator from Alabama, but since the Moss amendment is not in order and the amendment of the Senator from Alabama is in order, we just have to vote on what we are able to vote on.

So, amendment 2101 is a halfway position between the Randolph amendment and the Moss amendment, and I believe it is a fairly reasonable approach. It goes not—speaking now of amendment 2101—prevent the enactment of section 6, the nondegradation section of the bill. It does not prevent it from being enacted. The Moss amendment would strike section 6 out of the bill, and there would be no legislation on that subject.

The Randolph amendment would allow the enactment of section 6, and would not prevent its immediate implementation and enforcement. So amendment 2101 has a halfway position; it follows the route of the Senator from West Virginia in setting up a commission, giving it its mandate, and allowing the enactment of section 6, but provides for the suspension of its applicability for a period of 1 year following the report of the commission.

That would certainly seem to the Senator from Alabama to be a reasonable approach. It would set up a commission to study the provisions of section 6, its effect on the economy, and its effect on the environment, and then report back.

I believe it is unlikely, with the mandate given the commission on the points to study set out in amendment 1798, the Randolph amendment, that the commission is going to rubber stamp every single aspect of section 6.

So amendment No. 2101 would allow the enactment of section 6. We would have it on the statute book. It would not be necessary to come back to Congress and try to pass something. It would be there. It would be on the books. But pending the report of the commission and the 1 year time for implementing not section 6 but the recommendation of the commission with respect to the provision of section 6, we would have a logical method of proceeding.

Let us see some of the provisions. There must be some doubt about section 6. The Randolph resolution calls on them, under section (A), section (B), section (C), section (D), section (E), and section (F) to study various aspects of section 6.

Starting off they are supposed to study:

... whether the provisions relating to the designation of, and protection of air quality in class I regions under this Act are appropriate to protect the air quality over lands of special national significance, including recommendations for, and methods to (i) add to or delete lands from such designation, and (ii) provide appropriate protection of the air quality over such lands; . . .

They are supposed to investigate how section 6 is going to fit into that.

The next portion of their mandate is to study, among other things, and this does not limit them to this:

... whether the provisions of subsection (g) of section 110 of this Act . . ."

That is, section 6.

... including the 3-hour and 24-hour increments, (i) affect the location and size of major emitting facilities, and (ii) whether such effects are in conflict or consonance with other national policies regarding the development of such facilities; . . .

This is another phase of section 6 that they are supposed to investigate. All the while section 6, under the Randolph proposal, is in full force and effect, and there is nothing to prevent them acting in these areas as to which they are conducting studies.

Then the Commission is called on to study as to section 6, this section that would be enacted under this bill:

... whether the technology is available to control emissions from the major emitting facilities which are subject to regulation under subsection (g) of section 110 of this Act, including an analysis of the costs associated with that technology.

There is a big—I will not say it is a loophole—gap in information, with respect to the provisions of section 6 because from this section here it would seem to indicate that we are not in possession of this vital bit of information before we move forward.

Under section (C), the Commission called on to make a study, and this such a tremendously important aspect the study, on this important feature.

... whether the technology is available control emissions from the major emitting utilities which are subject to regulation under subsection (g) of section 110 of this act...

Those phrases can be used interchangeably, as I understand it: Section 6 or it could be referred to as subsection (g) of section 110 of this act. When we use one we also are using the other.

When we are enacting section 6, if we do not even know—and we are calling on the Commission to determine, and right here in the Randolph amendment this Commission is supposed to study it, whether the technology is available to control emissions from the major emitting facilities which are subject to regulation under subsection (g) of section 110 of this act, including an analysis of the costs associated with that technology, how are we going to enact a section when we do not even know whether they have the technology available to control emissions that are required to be controlled under section 6?

And we do not know the cost, apparently, because under the Randolph amendment, we are asking this Commission to make that study.

Mr. BUCKLEY. It was not so much asking the Senator to yield for the privilege of asking a question as to suggest that the statement that he has made thus far seems to me to suggest that he does not fully understand the state of the current law as it affects nondegradation. If he did fully comprehend this, I believe he would be urging the enactment of section 6 to bring a degree of certainty to an area where there is now enough ambiguity, and enough litigation in the courts to create a certain amount of paralysis.

The committee, in this provision, is not increasing the standards or tightening standards. What we are doing is simply codifying portions of the existing regulatory program, developed pursuant to a Supreme Court decision. In doing so, we are creating certainty where there is now uncertainty. We are making it possible for business to go ahead with investments.

Mr. ALLEN. I understood the Senator was going to ask me a question rather than to make a speech on the subject. I say to the Senator that if this does lighten the load and clarifies the present law, that information has not penetrated the thought of those who would be regulated by this law, and they are of the opinion that far from lightening their load this greatly increases it. I think that those who are to be regulated by it would be the best judges of whether this new bill imposes greater or less restrictions.

The point I was making is if we are going to have to get this Commission to study such questions as to whether we have the technology

available and what it would cost to put in the requirements that are authorized under this section and if we do not even know that, we certainly need to study that prior to the enactment of legislation.

Mr. CANNON. I am disappointed that apparently we are not going to get to vote on the Moss amendment, as I understand the procedural situation now. Short of that, I would support the Senator from Alabama.

I represent a State whose economy depends substantially on the future growth and development of the Nation's mineral resources, in particular copper. I am deeply troubled about the conflicting picture that is developing about the impact this provision will have on my State, as well as on the Nation's ability to maintain and enhance its mineral resource position. Confusion and contradiction abound throughout a multiplicity of preliminary studies and statements addressing the impact of nondeterioration.

The Department of Commerce revealed in a recent study that no new copper, lead or zinc smelters of economic size could be built on open lands in the continental United States if nondeterioration becomes law. Even the expansion of existing nonferrous smelters in certain sections of the country would be severely limited under this proposal, according to this study.

This is a grave warning. Yet, the Environmental Protection Agency has released a study stating that the predicted impact on the mining and metals industry will be minimal. I cannot consider "no expansion" and "severely limited expansion" "minimal."

I happen to be chairman of the Stockpile Subcommittee, and we are very much concerned with the stockpile requirements of this country. I do not see how they are going to be able to be met if we follow this kind of shortsighted policy.

The Department of Commerce also has available summaries of some additional 17 studies examining the initial impact of nondeterioration. These studies examine the impact on our capacity to generate electric energy from fossil fuels; on the future growth of the coal industry; on the growth in the pulp and paper manufacturing industry, and on future growth in petroleum refining.

Yet, EPA has provided us a study which asserts that nondeterioration will have only minor effects on many of these industries, affecting only specific location and/or plant size.

Frankly, I do not know which of these assessments is correct. I know only that both cannot be right. These studies have made it abundantly clear that there is much we do not know about regulating future growth and development through increments of air quality.

It seems highly inappropriate to enact major legislation of such magnitude as nondeterioration without actually knowing the areas which will be affected and the economic impact which the legislation will have, as the Senator from Alabama has been pointing out.

This is particularly true when the limits to be set are more stringent than those which we have deemed adequate to protect public health and welfare.

There is a second aspect of nondeterioration which has received very little attention. Debate has centered on the economic costs of nondeterioration versus its environmental values and has virtually ignored the social costs of such legislation.

I cite for the Senate's examination an exploratory study published by the Department of Health, Education, and Welfare in 1973, following court decisions upholding nondeterioration. This HEW study raises the serious prospect that the social costs of nondeterioration may be far in excess of any benefits to be gained—costs that would be borne disproportionately by the poor, the aged, the disadvantaged and the racial minorities. According to this study, nondeterioration, by curtailing the creation of potential jobs and by creating higher prices for energy, transportation and manufactured goods, impacts hardest on the innercity, low-income resident and the rural poor.

Despite our national commitment to improve the environment, no law should be passed which risks imposing severe hardship on the American people, particularly those who do not yet fully participate in America's high standard of living.

Right now, we are confronted with a situation in my State, to which I will address myself later, in which we are forced to shut down a copper smelter in the eastern portion of the State. The closest town besides the two towns that are directly dependent on this copper smelting operation is 77 miles away. The closest town of any appreciable size is more than 200 miles away. Yet, we are going to have to shut down this smelter and put this business out of existence in order to protect the environment in that area; and the only people living in the area are in two small communities, Ely and McGill, that are dependent upon this industry for their livelihood.

So we are going to protect the environment. We are going to turn it back to the jackrabbits and the rattlesnakes. That is what it will amount to in this particular instance.

Confusion abounds in yet a third area related to nondeterioration and that is the adequacy of the information on which we base our standards to achieve clean air. The Public Works Committee, in reporting the Clean Air Act amendments, noted it would be useful "to have an ongoing review of this process." There is little consensus about our ability to measure pollutant levels from industrial sources in meaningful ways and even less about the magnitude of the effect of these pollutants on health and welfare.

Taken together, studies of the impact of nondeterioration indicate that answers to crucial questions are lacking. In the absence of well-founded information, confusion has filled the vacuum. We need further study on our measuring, monitoring, and interpretative capability; on the land areas covered under nondeterioration; on the impact on the specific areas which are likely candidates for installations of powerplants, copper smelters, and other essential industrial facilities; on the impact on jobs, on standard of living, on the availability of critical raw materials, on the social impact on all citizens.

Definite answers do not appear to be available. Yet we are about to vote on legislation that may seriously curtail the capability of our industrial sector to fulfill its proper role in economic recovery and expansion.

Senator Moss' proposal would expand the mandate of the National Commission on Air Quality, which is proposed under the clean air amendments, to report on the economic and energy effects of nondeterioration and to consider the policy in terms of its measurability and interpretative certainty. Senator Moss' proposal does not strike

at the intent of the Clean Air Act. It provides us with an opportunity—an opportunity we can ill afford not to take—to understand the impact of a nondeterioration policy before we legislate it.

It is for these reasons that I fully support the Moss amendments.

I say to the Senator from Alabama that it seems to me that his position—as I said, I would favor the Moss position—is certainly a reasonable one. I ask him if he thinks that these observations are the proper observations to make in support of the proposal that he has.

Mr. ALLEN. Yes, I certainly think so.

The Senator has pointed out the impact that this legislation could have on business and industry and the economic growth of his area. I certainly agree with his conclusion that with all these unanswered questions and the lack of information we apparently have on this subject, we should not be legislating in the blind. We should study first, find out the answers to this multitude of questions that the Commission is charged with studying, and get the answers before we enact legislation.

I agree with the points that the Senator from Nevada has made. I, too, favor the Moss amendment over the amendment I am suggesting, offering amendment No. 2101. It has been prepared only because the Moss amendment is not in order as to the Randolph amendment.

The Senator from Alabama and the Senator from Utah (Mr. Moss) and others interested in this matter agree that if the Moss amendment would be allowed to be considered first, we would completely agree on a time limit with respect to the Moss amendment, and we would greatly expedite the final vote on this bill.

Mr. CANNON. Is it not a fact that we would find ourselves in the position of legislating and then create a commission to study whether or not we have legislated correctly?

Mr. ALLEN. That is exactly right.

Mr. CANNON. In other words, we should know whether we are legislating correctly on the basis of a study before we enact the legislation.

Mr. ALLEN. Yes. There must be some doubt about the advisability of this legislation, because, as I pointed out in reading from the Randolph amendment, there seem to be six tremendous areas of uncertainty and doubt about the bill. The Commission is charged with studying these particular questions.

Mr. BUCKLEY. I understand that the Senator is concerned about the impact of section 6 on business, because of the tremendous outpouring of concern expressed by the business community.

It is my belief that this is the result of a great deal of misinformation circulated by the Chamber of Commerce and others. In an attempt to clarify that, on Tuesday, I introduced a statement that included many of the assertions that are being circulated about this provision, and I have answered those points with specific statements as to what the facts are. This appears incidentally, in the Record of Tuesday, at page S 12581. I should like to note, for the benefit of the Senator from Alabama, some of these specific assertions, and my rebuttal and ask him if I am wrong as my assertions on the actual impact of this legislation.

MR. ALLEN. In recent days, I met with the operators of some industries in Alabama, one of which recently had a plant closed by the EPA, which threw 300 people out of work. I told them that the manager of the bill, Mr. Muskie, had assured me that the provisions of section 6 were less burdensome on industry than is the present law. I might state that my statement as to Senator Muskie's views was scoffed at, because the operators of the plants—and this is not some sort of Chamber of Commerce release, this is the actual operators of the plants—fear that they are going to be run out of business if this bill passes and it will have a tremendous impact on the future economic growth of the Nation.

I wonder why the sponsors of this bill have not been able to do a better job in convincing those who they say are going to be beneficiaries of this legislation that, in fact, they are beneficiaries rather than victims. I should like for the Senator to tell what effort has been made by the sponsors of this bill to show that they are wrong in their conception that the enactment of this legislation will run them out of business, prevent future economic growth in an industrial area.

MR. BUCKLEY. I am delighted that the Senator from Alabama has cited that particular example, because it illustrates the point I have tried to make. It illustrates the extent of the misinformation and why I took pains not only to insert clarification in the Record, but also to circulate them some months ago for the benefit of Members of the Senate.

The people in the industries of Alabama who state that section 6 will result in the closing of any plant in the United States simply have not read section 6. It gives no one any authority to close down anything. What it does control is the degree to which new pollution can be added through the construction of new major polluting facilities. We are not talking about existing plants. We are talking about limits on the size of new plants, in terms of additional pollution permitted. It is precisely this misconception that has caused such a tremendous lobbying effort to block this legislation, which, as I say, would have the effect of removing uncertainties, without changing the thrust of the law as it exists today.

For example, in the statement to which I referred, I said that, in one of these broadsides, we had the following assertion:

The committee's bill goes considerably beyond existing law.

That, in effect, is what people in Alabama told the Senator from Alabama. The fact is that the requirement to "protect" existing levels of clean air has been law since 1967. This bill refines that requirement more precisely, replacing existing EPA regulations with a defined congressional policy. I might add that the policy that we would substitute for EPA regulations would place less reliance on the bureaucracy, and shifts responsibility to the States, so that the States may use their discretion.

I shall bring up another assertion that is made, for the benefit of the Senator from Alabama. It is asserted that class I areas will be off limits to construction of major new polluting sources. I point out in the statement, which I circulated earlier, that the class I areas are national parks and national wilderness areas. Logic and the existing legislation affecting national parks and wilderness areas is such that there is not going to be any construction in those areas of major pollution sources, such as steel mills.

Mr. WILLIAM L. SCOTT. It is my understanding that the pristine areas covered under this bill would include Shenandoah National Park. We have the Valley of Virginia paralleling the parklands, and I understand that we cannot have new construction near the park if it might pollute the park area. Is that accurate?

Mr. BUCKLEY. Only if it would affect the air quality values for which the Shenandoah Park was set aside. That determination will be made essentially by the States.

Mr. WILLIAM L. SCOTT. Will not the Administrator of the Environmental Protection Agency have the right to overrule any State action and make the final determination?

Mr. BUCKLEY. No.

Mr. WILLIAM L. SCOTT. Page 3 of the report indicates that he does.

Mr. McCURE. I think this is one of the most misunderstood parts of the action that the committee took, and I think it demands clarification. The Senator from Virginia has expressed it exactly as many people understand it. That is not the way the committee intends it. I think the manager of the bill, the Senator from Maine, the day before yesterday, made a very clear statement regarding the State's position and that decision.

The bill states that the Federal land manager of the class I area has the right and the responsibility to intervene in the State decision-making process with respect to the major emitting facilities that might be built on the land which is not inside the Federal, class I area. If he thinks the plant will violate the air quality related values for which that area was created and managed, he has the duty to intervene. But the decision shall be the State's.

Mr. WILLIAM L. SCOTT. We have Russell Train as the present Administrator. I understand he calls himself an environmentalist, and I believe he is more interested in the environment than he is in the business community and a healthy, expanding economy. I think his record will indicate that. Looking at page 3, we find:

The Administrator's role is one of monitoring State actions. States have authority to issue construction permits to new major emitting facilities in clean air areas.

That would indicate the Senate language favors the State. But reading further, we find:

The Administrator thus could go to court to stop a permit for activities which would exceed the increments of pollution or which otherwise did not comply with the requirements of this section, including use of best available control technology. But the Administrator could not and should not attempt to burden this section with unnecessary regulations and guidelines.

Skipping the next paragraph, it states:

The Committee has also asserted a Federal interest in protecting air quality over certain areas of Federal ownership, by a separate test. The potential activity outside those Federal lands—such as national parks, and wilderness areas and international parks—could be prohibited if it would impair the air quality values associated with those Federal lands.

I think that that is contradictory to what the Senator from New York is saying.

Mr. McCURE. The Senator from Virginia has accurately stated the report. But again I think there is a misunderstanding of the committee's intention. The first paragraph that the Senator read relates to the action the Administrator takes to enforce in the class II areas, not class I.

The second paragraph which he read relates to the Administrator's responsibility with regard to class I areas.

The first paragraph refers to the court tests, the second does not.

I think it would be clear that the Administrator, or anyone else, who thought that either the Administrator or the State had taken erroneous action could go to court to test whether the State's decision was correct. But it does not detract from the fact that the State has control over the final decision.

Mr. WILLIAM L. SCOTT. Let us look at the next paragraph:

The policy is clear: there is a uniform national standard against which deterioration is judged; there is a national requirement that each new major facility to be located in a clean air area install the best available control technology; and there is a national interest in the protection of air quality-related values in national parks and wilderness areas.

Is it not a matter that to a large extent would depend on the interpretation by the Administrator of the Environmental Protection Agency as to how far the Federal authority goes?

Mr. McCLEURE. I think the legislative history will be much clearer after this colloquy. There is a separate test, as was stated in the second paragraph the Senator read, for the air quality-related values for which a class I area was created.

The final paragraph the Senator has read, relating to the uniform national standard says, in the second part of that paragraph, that there is a special interest in the class I areas, as we are indicating.

I think it is very clear that the intention of the committee is to treat the class I area process and the class I area standards separately from the uniform national standard. The Administrator has certain responsibilities on the class II areas. He does not have the same kind of responsibility on the class I areas.

But we might just add at this point the fact that in the committee's deliberation on this matter, we discussed the definition of "major emitting facility." We carefully limited the kind of industrial source that would fall within the category of a "major emitting facility." We looked at the action that was taken by the Administration in a draft study, which had been presented to EPA by the Research Corp. of New England. The study listed 190 different kinds of facilities that might be determined to be major emitting facilities.

The EPA Administrator, in the regulations, extracted from that list of 190, exactly 19 types of sources that he thought should be initially classified as major emitting facilities.

The committee, in looking at that, said, "That is not quite as far as we would like to go." and we added 9 others to that list of 19. But there were 162 of the 190 on the list that this committee did not specify as being typical of the types of sources that the committee desired to reach under the list of major emitting facilities.

I ask that an extract from that report of the Research Corp. of New England, listing the 190 types of sources, from which the EPA took 19, and the committee took 28, be printed in the Record at his point as an illustration of what the committee examined and the kinds of sources the committee intended to include and exclude, recognizing that it is neither exclusive nor invariable. There is administrative discretion to add to the list, to change the list. The committee spoke very clearly on its intent on that question.

TABLE 5-1.—STATIONARY SOURCES OF AIR POLLUTION

	Particu- late	NO <sub>x</sub>	SO <sub>x</sub>	HC	Fluoride com- pounds	CO	Trace metals	Hazard- ous pollu- tants	Acid mist	Lead	Ammonia	Sulfides	Chlorine	Odors
I. STATIONARY COMBUSTION SOURCES														
Boilers, fossil fuels:														
0.3×10 <sup>6</sup> Btu/hr.	×	×	×	×		×	×							
0.3—10×10 <sup>6</sup> Btu/hr.	×	×	×	×		×	×							
10—250×10 <sup>6</sup> Btu/hr.	×	×	×	×	×	×	×							
250×10 <sup>6</sup> Btu/hr.	×	×	×	×										
Mixed fuel:														
Coal and refuse	×	×	×											
Oil and refuse	×	×	×											
Wood waste	×	×												
Engines, stationary:														
Gas turbines:														
Electric utility	×	×	×			×								
Pipeline	×													
Internal combustion:														
Spark ignition (heavy duty gas fired)		×	×	×		×								
Diesel and dual fuel	×	×	×			×								
Incinerators:														
Auto body	×	×	×	×		×								
Conical	×	×	×	×		×								
Industrial/commercial	×	×	×	×		×								
Municipal	×	×	×	×		×							×	
Pathological	×	×	×	×		×								
Sludge	×	×	×	×		×	×							
Miscellaneous combustion:														
Open burning:														
Commercial/industrial	×	×	×	×		×								×
Agricultural	×	×	×	×		×								×
Orchard heaters	×	×	×	×		×								

TABLE 5-1.—STATIONARY SOURCES OF AIR POLLUTION—Continued

	Particulate	NO <sub>x</sub>	SO <sub>x</sub>	HC	Fluoride compounds	CO	Trace metals	Hazardous pollutants	Acid mist	Lead	Ammonia	Sulphides	Chlorine	Odors
II. CHEMICAL PROCESS INDUSTRY														
Acids:														
Aldipic		X												
DMT/TPA (nitric acid oxidation)		X												
Hydrochloric									X					
By-product									X					
Salt														
Hydrofluoric	X		X		X									
Nitric		X												
Phosphoric														
Wet process					X									
Thermal process	X													
Sulfuric			X						X					
Acrylonitrile				X		X								
Ammonia:														
Methanator plant				X							X	X		
Regenerator and CO-absorber plant				X		X								
Carbon black:														
Channel process	X			X		X						X		
Furnace process	X			X		X								
Charcoal	X			X		X								
Chlor-alkali:														
Diaphragm cells													X	
Mercury cells													X	
Crude oil and NG production, sulfur recovery			X									X		
Detergent	X													
Essential oils														
Ethylene dichloride (oxychlorination process)				X		X								
Ethylene oxide				X										
Explosives:														
High		X	X											
Low	X	X	X											
Formaldehyde				X		X								
Fuel conversion, coal gasification:														
High Btu gas												X	X	
Low Btu gas												X	X	
Paint														
Phthalic anhydride	X			X										
Naphthylene				X		X								
O-xylene				X		X								
Printing ink														
Soap	X													
Sodium carbonate (solvay process)	X										X			





<b>Clay and flyash sintering:</b>					
Clay.....	X	X	X	X	
Flyash.....					
Coal cleaning (thermal drying).....					
Fiberglass.....	X	X	X	X	
Wool processing.....					
Textile processing.....					
Frit.....					
Glass.....					
Soda lime glass.....	X	X			
Opal glass.....					
Gypsum.....			X		
Lime.....					
Mineral wool.....	X	X			
Perlite.....			X		
Phosphate rock.....					
Calcining.....	X	X	X	X	
Drying.....					
Grinding.....					

## V. METALLURGICAL INDUSTRY

[illegible]





MR. WILLIAM L. SCOTT. The committee and the distinguished Senator, my friend from Idaho, are just a little more confident in the bureaucracy than I am in the issuance of regulations by the Environmental Protection Agency. I think that is part of the problem, not part of the solution.

MR. McCLORE. I know the Senator from Virginia has very grave doubts about the wisdom of allowing the bureaucracy to make decisions which the Congress ought to make. That is something on which I agree fully.

We tried to do two things in the committee bill: One was to carefully limit that discretion, much more carefully than is ordinarily done in legislation, with much more carefully defined roles than would occur if the Moss amendment passed, which would leave it to the EPA to do without any restrictions at all.

Second, we did affirm again the principle that these decisions ought to be made primarily by the State agencies, rather than the Federal agency, and that, too, is clearly expressed in this bill.

MR. WILLIAM L. SCOTT. That is the purpose of my amendment 1617.

MR. BUCKLEY. I understand that. I think, frankly, the honest alternatives are either the committee bill or the William L. Scott amendment. These are the issues: Are we going to continue our present existing policy of nondeterioration, or are we going to abolish that policy? What the committee does is to recognize and continue that policy, but to take it away from EPA, enhancing the authority of the States in making the critical judgments.

I wish to continue to discuss some of the misconceptions held by members of the business community, and to explain the facts regarding our bill.

To complete the discussion that the Senator from Idaho and the Senator from Virginia and I had, I wish to point out a few questions about matters of procedure.

Question: Who issues the permit? The committee bill says that the State does. The existing situation, under the court-required EPA regulations, leaves that to EPA.

Second question: Who determines a class I designation for national parks and wilderness area? Under the committee bill, the answer is: Congress. Under the current law, it is the Federal land manager.

Third question: Who determines a class I designation for other Federal lands?

Under the committee bill, it is the State and Federal land manager, with either having a veto. Today that authority is exclusively vested in the Federal land manager.

The fourth question: Who determines what level of technology is needed?

Answer: Under the committee bill, it is the States. Under existing law, it is EPA.

There are a number of other misconceptions about this bill that I would like to address. The Chamber of Commerce and others have said that the significant deterioration provision in the bill will have a more severe impact on some States than on others.

The fact is that the opposite is true. By setting a single standard for determining significant deterioration, the bill equalizes the impact as much as possible. Certainly this is true in comparison to the more rigid,

three-tiered scheme in the existing EPA regulations, which industry now appears to favor. Our committee was urged by industry to resolve this issue with some kind of legislation to remove some of the uncertainties that attend the EPA regulations, uncertainties compounded by litigation that will keep this issue in limbo for another year or two or even longer. Now they say, give us back the uncertainties. I disagree.

Another misconception, and I quote:

The mandatory establishment of class I zones will drastically limit, if not prohibit, the citing of large fossil-fuel electrical generating facilities in California.

That statement was made by the Pacific Gas & Electric Co., which circulated maps showing "how little of the State of California remains for development" based on a 50-mile buffer zone around "California's national forests and national monuments":

These buffer zones, within which major sources will also be prohibited, can extend 150 miles." (Pacific Gas and Electric).

The fact is that national forests and manuments do not receive Class I review unless the State and the Federal Land Manager agree to provide Class I designation for specific areas.

Today, only the Federal Government makes that judgment, but we are giving the States a veto power over that judgment:

Each plant-location decision will be made under the Senate bill after a case-by-case analysis on the air quality value for which a particular national park or wilderness is operated.

*Assertion:* Assateague Island National Seashore would be established as a Class I area and there would be a 55-mile buffer zone around the seashore "within which any industrial, commercial or residential development would be strictly limited." (Delmarva Power).

The fact is that any designation of a national seashore as a Class I area would be made jointly by the State and the Federal Land Manager; it is not mandated by the Senate bill. Each major facility proposal would be reviewed separately on the basis of air quality values; there would be no reference to a buffer zone. The provisions for analyzing significant deterioration involve only specified types of major new industrial sources.

As the Senator from Idaho explained, these are limited in number, and they are the major pollution sources.

The provisions of this bill have no impact whatsoever on commercial or residential development:

*Assertion:* "No new construction of a major facility may be begun in an area with air better than the Federal Standards without an EPA permit." (Deere and Company). The provisions on significant deterioration give "a single appointed official in Washington, D.C., the final say-so on how states and their citizens can use public and private lands." (Chamber of Commerce)

The fact is that the Senate bill arguments reliance on state authority. The bill requires a state permit, not an EPA permit. It is the present EPA regulations that could be construed as increasing reliance in Washington.

The adoption of the Moss amendment would extend indefinitely the exclusive authority of the EPA or Federal land managers in these various areas.

The next misconception:

In discussion expansion, a hypothetic plant might take up "65 percent of the allowable pollution increment established by the Senate bill. But if, several years after our construction program is underway, significant construction is begun by several other employers or by a municipality in the same or nearby cities which uses up the remainder of our allowable increment (and this appears quite likely), we would simply have to stop building." (Deere and Company)

The fact is that this statement is false. The Senate bill creates a pre-construction review process. Once the state agrees to permit construction of a facility,

this legislation imposes no restrictions that could halt construction, unless the source violates the terms of the permit itself.

*Assertion:* "The technology necessary to determine with reasonable precision whether the proposed allowable non-deterioration increments are met is not presently available." (Deere and Company)

The fact is that the prevention of significant deterioration involves a permit-review process, based upon fully available measurement and modeling techniques to determine the dispersion of anticipated levels of pollutants.

Again, I will refer to the Chamber of Commerce and done of the misconceptions that it has broadcast so successfully across the country.

*Assertion:* Even in Class II areas, "smaller facilities with package boilers, such as small industrial, commercial, and public buildings, and large apartment houses, would also be restricted."

The fact is that this bill establishes a single national norm, allowing extensive growth up to that norm. According to Delmarva Power, "A plant as large as 2,000 megawatts could be built without violating the Class II increments for SO<sub>2</sub> or total suspended particulates (TSP) proposed by the Senate."

We do not in any way affect public buildings, large apartment houses, and so forth. Again, the restrictions are limited to 28 specific types of sources, major polluting sources.

The next misconception, again quoting from the chamber of commerce:

Any new or modified plant would have to use the best and most expensive air pollution control equipment, plus use the lowest sulfur coal.

The fact is that the significant deterioration analysis affect only a few, specified industries, not "any new or modified plant." Thus, it will not affect the vast majority of construction. The Senate bill does not require use of the "best and most expensive" pollution control equipment; it requires use of the "best available control technology," which is defined in the bill as a level to be determined on a "case-by-case" basis by each State, "taking into account energy, environmental, and economic impacts and other costs." Rather than forcing the use of "the lowest sulfur coal," the Senate bill seeks to promote the use of reasonable technology, thus encouraging industry to abandon its present posture favoring the burning low-sulfur coal in preference to the installation of control devices.

This analysis by no means encompasses a majority of the misstatements that have been circulated on the bill. But I hope that my statement will serve to cause Members of the Senate, who have not had the opportunity to analyze its provisions in detail to compare what we propose against existing law. I hope that this will cause people who oppose the bill, or favor the Moss amendment, to study the legislation and study the committee report, so they know exactly what it is that is proposed.

We must face the fact the committee would remove the uncertainties of which the business community has complained. We establish certainty and increase the authority of the State, as opposed to authority of EPA.

And, yes, the committee has provided for the creation of an air quality commission, because we understand that there is a lot we do not know. There is a lot we need to determine about better ways of measuring costs and effects.

When that Commission reports its findings, of course, the committee will sit down and take note, in order to determine what needs to be done to improve further our approach to the balanced control of air pollution.

Until we have such a study, we will either exist under the present law, or we will exist under a clarified law.

If we compare the state of the law now, which is based on court interpretations implemented by EPA regulations—which are attacked by environmentalists as well as businessmen—we have a situation where many people are afraid to move forward with major investments.

By removing these ambiguities, our bill would permit business to go forward with reasonable development and growth in the clean-air areas. And to go forward with assurance.

It is a step forward, not a step backward, which we propose. We do not propose new structures on business. Rather, we seek to lift structures from business.

I thank my friend from Alabama. If he contests the accuracy of anything I have stated, I would be happy to be educated.

Mr. ALLEN. Let me answer the Senator from New York.

I am somewhat intrigued by the sponsors of the bill saying that this will react to the benefit of those industrial concerns who would be regulated by the provisions of section 6, whereas the people to be regulated feel that it would place a great additional burden on them. I would call to the attention of the Senator from New York, who knows this perhaps better than any Member of the Senate, that Big Brother legislation is always represented as helping the people affected by that legislation. That is always the reason given for Big Brother legislation.

I am wondering if this legislation might not be subject to the same type of criticism. The Senator is saying that it is to the benefit of the people to be regulated, that it puts fewer burdens upon them, whereas those who are to be regulated feel like a great additional burden is being placed upon them.

Mr. BUCKLEY. I would like to point out that it is not a question of "to be regulated." They are already regulated.

Mr. ALLEN. I understand that. But they feel that this would give specific authority to regulate them far beyond what should be required, to the point where they will literally be run out of business, causing the loss of jobs throughout the Nation and causing great adverse economic impact throughout the country.

I am referring, certainly, to my State of Alabama.

Mr. McCLURE. The Senator from Alabama has said the sponsors of the bill seem to want to enact legislation that would, in effect, create a Big Brother.

Mr. ALLEN. I did not say that. I said that Big Brother legislation is enacted under the guise of helping the public, whereas it enslaves the public. I did not say this was Big Brother legislation. I asked if the same criticism might not be made of this.

Mr. McCLURE. That Big Brother already exists in the form of the court decision, under the existing law, and the EPA regulations. All we are trying to do in this legislation is to define the limits of the actions of that Big Brother, and to restrict its activities more carefully than it is under the present law, or would be under either the Moss amendment or the pending Allen amendment.

Mr. ALLEN. That is the very point the Senator from Alabama is making, that the Senators have not been very effective in getting across to those who are to be regulated that we are trying to help them.

They feel we are trying to regiment them. I am taking the view of my constituents over the professed desire and intention of the legislation.

In comparing the present regulations and authority with the provisions of this bill and the intent and purpose of this bill, the EPA regulations now, as I understand it have a class III for industrial development. Since I see only references to classes I and II, it would appear that the Senate bill wipes out class III and only allows class II increments, which I understand possibly are much stricter than EPA class III regulations. I would like the Senator to comment on that.

Mr. BUCKLEY. The Senator's statement of that particular fact is correct. I would point out that the EPA is being sued on the basis that under the Supreme Court decision in question it had no authority to carve out a class III.

I believe that any time somebody sits down and actually calculates what the Senate definition of Class II permits in terms of industrial expansion, there is a great deal of growth that is, in fact, allowed.

For example, it has been calculated that with the existing technology, it is possible in some areas to build a powerplant of up to 5,000 megawatts in a class II area. The largest powerplant now in existence in this country is a little more than 2,000 megawatts. It is a misconception that somehow or other the class II designation and the emission increment prohibits the expansion of major facilities. It does not.

Another thing that our bill does in another section is to make it easier for an existing powerplant to expand in areas where air is dirtier than the secondary and primary standards, provided the expanded plant does not increase the pollution burden. In my judgment, this is a very balanced act.

I was discussing the provisions of the Randolph amendment. I was pointing out that apparently there is so little information available regarding the impact of section 6 that we should not proceed with enacting that section until the study has been made.

I was pointing out the various areas which this Commission which is set up under the Randolph approach and under the Moss approach to study, the areas covered by section 6.

There are 6 major areas as to which the Commission is charged with the duty of studying and making recommendations. These very areas are the areas as to which section 6 enacts provision. I was pointing out that we were getting the cart before the horse in enacting legislation and then mandating a commission to study the very areas covered by the legislation. I was pointing out that if we do not have the information now that it seems we do not have, we certainly have no business legislating in those areas.

I had read the first three of the areas that the Commission is to study, and I am going to go back to the last of those, to comment on that.

The Commission is charged with the duty of studying—this is the third area—

Whether the technology is available to control emissions from the major emitting facilities which are subject to regulation under subsection (g) of section 110 of this Act, including an analysis of the costs associated with that technology.

I might say again that subsection (g) of section 110 of the act is the same thing as saying section 6. Those terms can be used interchangeably. But if we do not even know whether the technology is

available that would be required under section 6, and we do not know the cost of the technology if it is available, and yet we go ahead and enact legislation that would require the use of technology where we do not even know whether that technology exists, and if we did not know the cost of it, and we enact this statute and say to the Commission, "You ladies and gentlemen go out and find out whether they have got adequate technology to do what we are requiring, and after you find that out, find out the cost of that technology." I had to use the word, but that is how foolish this procedure is, that we enact a law and then find out whether it is possible to implement that law.

Why not find out first whether the technology is available, how much it costs, and whether it will place too great a burden on business and industry, and then enact the law in the light of the information the Commission obtains?

All right, let us go to the next area they would investigate. They would investigate—

Whether the exclusion of nonmajor emitting sources from the regulatory framework under this Act will affect the protection of air quality in class I and class II regions designated under this Act;

I assume that if we had the information we would not have to ask the Commission to ascertain the information. So I think it is safe to assume, by process of logic, that if we ask them to get the information we do not have the information. Well, if we do not have the information we ought not to be legislating in that area. We ought to find out what the facts are, and then legislate.

All right, what is the next area? They are charged with the duty of studying—and of course making recommendations based on that study—

Whether the increments of change of air quality under this Act are appropriate to prevent significant deterioration of air quality in class I and class II regions designated under this Act;

I am reading from the Randolph amendment.

Well, why not find that out to start with, before we start legislating?

Under subsection (F), they are supposed to study—

Whether the choice of predictive air quality models and the assumptions of those models are appropriate to protect air quality in the class I and class II regions designated under this Act for the pollutants subject to regulation under subsection (g) of section 110 of this Act.

There again, it is legislating before the facts are ascertained.

Going back to the first two areas that they are to study, under subsection (A) they are to study—

Whether the provisions relating to the designation of, and protection of air quality in class I regions under this Act are appropriate to protect the air quality over lands of special national significance, including recommendations for, and methods to (i) add to or delete lands from such designation, and (ii) provide appropriate protection of the air quality over such lands;

It seems to me that the knowledge that we have at this time is mainly note-worthy by its absence. We seem to have no expertise in this area that has been adduced or accumulated up to this time, if we have got to have a commission to make studies in all of these areas about the subject of the legislation proposed in section 6.

It would seem to me that this Commission, in effect, would be doing what might be accomplished by a Senate standing committee in having

hearings and the like, but I do not object, and as a matter of fact I like the idea of having this Commission to make the study. I believe they would make a more exhaustive study. They can work at it pretty well full time, whereas a committee is quite limited in the days that it could apply to a hearing, and moreover a hearing is generally based on the oral testimony of witnesses, and really does not give the opportunity for research that a commission would have. So I like the idea of the Commission to ascertain these facts. But I do object strenuously to legislating and then studying the area as to which we have legislated.

That is not what the Randolph amendment provides for. It provides for legislating and then studying. The Moss amendment provides for the study and then, if Congress so desires, legislating with respect to the information obtained and the recommendations made by the Commission. The Moss amendment sets up a commission to make this very same study that the Randolph amendment provides for. But pending the action of the Commission; there is no legislation enacted—none at all.

While I feel that the Moss amendment is the best approach, if we cannot at this time vote on the Moss amendment, I would rather vote first on the amendment of the distinguished Senator from Florida and myself ahead of the Randolph amendment.

Our amendment provides, in effect, that section 6 will be enacted, the Commission will be set up, make its study and its report, and after that report is made Congress, or the public, those concerned, would have 1 year before the provisions of section 6 would go into effect.

So, section 6 would be passed, but it would not be implemented or enforced until 1 year after the commission makes its report.

A year really is a very short time, when we consider legislation of this magnitude. Really, it ought to be 2 years.

Congress would have 1 year in which to implement the recommendations of the Commission and revise section 6 in such a manner as the recommendations of the Commission indicated that it should be revised. There would be a 1-year waiting period after the Commission makes its report. And if Congress could pass some law revising section 6 in line with the recommendations of the Commission, that would be fine, and that is what I hope they would do, but if they are unable to get any legislation through, we would still have section 6 as the law; good or bad, it would be there, even though the Commission says it is bad. We have a year to work it out and perfect it, not as provided by the Randolph amendment, which would put section 6 into effect immediately on the enactment of this bill.

So at some stage of the proceeding, and I do not think it will necessarily be right away, in consultation with the Senator from Florida (Mr. Stone), we will offer this amendment unless an agreement can be reached for taking up the Moss amendment, which contains the heart of this entire controversy: that is not enacting until after a study has been made. As I have stated in the Chamber, and it looked like an agreement was going to be reached, I would agree and I know the Senator from Utah (Mr. Moss) would agree, because he stated that he would, to a time limit on the Moss amendment. If we want to move this thing off dead center, let us take up the amendment that everyone expected to be offered and be the center of the entire controversy; but cannot be offered under the parliamentary situation. That is what

prompted the Senator from Florida and me to prepare amendment No. 2101, which is as near to the Moss amendment as we could get under the parliamentary situation.

I talked at some length about the Randolph amendment, which is the pending business at this time, and I had much more to say. I think that at least half of the time was taken up by the proponents of the Randolph amendment defending it or defending the situation in which Moss amendment does as compared with the Randolph amendment we find ourselves. But I wish to discuss, with the Senate what the Moss amendment does as compared with the Randolph amendment and what it does not do.

MR. WILLIAM L. SCOTT. It was my intention today to call up my amendment No. 1617, and I had talked with the authors of the amendment now before the Senate. The Senator from Alabama and the Senator from West Virginia were agreeable to this procedure, to set aside temporarily the pending business and to permit me to bring up the amendment. It is my understanding that the Senator from Utah would prefer that we do not do that and would object if I made a unanimous-consent request.

Is it the intention of the Senator from Utah to object to such a request?

MR. MOSS. Yes, it is.

I did confer with the Senator from Virginia on several occasions, and at one point I thought it might be suitable to permit that kind of set-aside. However, on mature reflection, I think that the amendment of the Senator from Virginia, if it is brought up, probably should come as a proposed amendment to the Moss amendment. Otherwise, it would not be in line with what we are trying to get focused on in the Senate. Therefore, I am compelled to say that I would object to a unanimous-consent request.

MR. WILLIAM L. SCOTT. I wanted to make this statement for the record and for the information of my colleagues with whom I talked, to indicate that it was not my desire to change what I had told them earlier.

In response to the Senator's comment about my offering an amendment to the Moss amendment, I have such an amendment. It has been printed. I have a separate amendment which would knock out completely the nondegradation provisions, not only as to section 6 in the bill but also as to the court decisions under which many regulations have been issued. I want to offer both amendments at the proper time.

MR. MOSS. Before discussing my amendment and comparing it with the Randolph amendment, I should like to point out that, we are talking about the Moss amendment, which has the approval of the President of the United States.

I have in my hand a clipping from the Deseret News, of Salt Lake City, Utah, of July 16, 1976, which contains an article by Mr. Gordon Elliott White, who is a Washington correspondent for the Deseret News. This is a report of an interview which Mr. White had with the President of the United States on the 15th of July. It appeared in the newspaper on the 16th of July. The interview, of course, covers other matters besides the Moss amendment, but the paragraphs that have to do with the Moss amendments are as follows:

Mr. White, in summarizing what the President was for or against, said:

The President favors an amendment which would delay for a year the new, stricter provisions of the Clean Air Act.

A later paragraph in the same article reads:

Ford passed a legislative proposal by Senator Frank E. Moss (D-Utah) to put off new, stricter Clean Air Act amendments for a year is a good one.

Then he quotes the President directly, as follows:

I am sympathetic to the Moss amendment. I believe that the significant deterioration issue requires more study, and I think the Moss amendment would give that time.

Finally, the third paragraph in the same article, which is directly on the matter now before the Senate, reads as follows:

Proposed new legislation which the Moss amendment would delay would prohibit any significant deterioration of existing clean air over Federal lands. It has been attacked by the State as barring development in large parts of Utah.

I read those excerpts into the Record simply to make it clear that the President of the United States has spoken very directly on this matter. He was asked specifically about the Moss amendments, and he declared that he supports the Moss amendments, and he gives some of his reasons for doing so.

So, in face of this debate, which has been going on now for approximately 4 days, the opinion of the administration and the President has not surfaced. I do not know why we have not got around to discussing whether or not this met with the approval of the United States. If this body should pass the Clean Air Act amendments and the House should be in agreement, it would not become the law of the United States unless the President were willing to sign it or unless we were prepared to override the President by a two-thirds veto in both bodies of Congress. If this matter is controversial, I am sure we would not have two-thirds who would override if the President vetoed.

I am not saying that the President indicated that he would veto anything that did not contain the Moss amendment. But by saying that he favored it and by describing it, saying that there should be time for study before we lock in nondegradation, he has indicated his state of mind, which leads me to infer that he most likely would veto a bill that wrote nondegradation in as the law of the land, simply providing for a later study to see whether it should be taken out of the law of the land.

That is the thing I come back to again and again: That we should not lock ourselves in until we know what the effects of section 6 will be.

My amendment provides that the law on clean air will remain as now written. I think everybody agrees that if it is enforced fully, it is enough to protect the health and welfare of the country, without going on to this farther out area of nondegradation. I believe that during that year, we are not going to come to any disastrous result in the United States. If that were so, we would have people being sick and disabled and whatever else might come from polluted air.

I also would like to point out, in connection with a statement by the President himself, that my amendment has received scrutiny from six of our major Federal agencies that would have to do with the problems that would be raised by air quality standards that included nondeg-

radation. Of the six agencies that have reported back to me and my committee, only the EPA has said that they would not support the Moss amendment. The others have all indicated that there be a 1-year suspension—at least a year—of any nondegradation until the study is completed and until it can be evaluated and we can determine what the impact of nondegradation would be.

I ask to have printed in the Record copies of letters that I have received from the Chairman of the Council of Economic Advisers, the Department of Labor, the Energy Research and Development Administration, and the Federal Energy Administration, as well as the Department of the Interior.

THE CHAIRMAN OF THE COUNCIL  
OF ECONOMIC ADVISERS,  
*Washington, D.C., June 8, 1976.*

HON. FRANK E. MOSS,  
*U.S. Senate,  
Washington, D.C.*

DEAR SENATOR MOSS: This is to respond to your request for CEA views on the nondeterioration section of the Clean Air Act Amendments of 1976. As you have indicated, the courts have interpreted the Clean Air Act of 1970 to mean that polluted regions shall be brought into compliance with ambient standards and that clean regions shall not be significantly deteriorated, even if the standards are not violated.

Strictly enforced, this interpretation could constrain industrial growth in the United States. Growth could occur only to the extent that existing industry reduced pollution and other sources, such as automobiles, were kept in check. The EPA regulation that would establish three classes of regions, two of which could be deteriorated, recognizes this but at the same time this regulation is still subject to question as to how it will affect both industrial development and the environment.

The question of whether industries should be allowed to locate in clean areas hinges on the nature of pollution damage as dependent on discharge levels and on the distribution of costs and benefits among different geographic and socioeconomic groups. If the damage caused by additional pollution rises with the pollution level, it is less damaging to locate new industry in relatively clean areas. If damages increase more slowly as pollution levels rise, it is better to locate new industry in areas that are already polluted. Not much is known about pollution damage functions, but most researchers hypothesize that damages per increment of pollution become more severe as pollution levels rise.

But there are important factors to the contrary. One is that visibility drops off more rapidly with early increments of pollution, so that pollution should be avoided in certain areas of natural beauty. It is difficult to weigh the health costs in Chicago against the visibility cost in Cheyenne, but that is what is required. Perhaps best of all would be a plant site with low pollution, few people and little natural beauty.

A second factor concerns individual preferences. Some environmentalists claim that people who like clean air or suffer greatly from air pollution locate in areas like Cheyenne. To spread pollution evenly across the country would offset the location decisions of such people and remove the option of finding pure air somewhere in the United States. The argument certainly supports the notion that some areas should be kept clean. We should not aggregate costs and benefits and forget about the impacts on particular groups or regions of the country.

It is our judgement that properly cited power plans in some low population States have more net benefits than other sites, taking economics, the environment and energy independence into account. But we are concerned with distributional impacts. Any Government action creates gainers and losers, but the dichotomy may be especially sharp where nondeterioration is concerned. The impacts on future generations are also relevant. Much revision in procedures has to take place before we have a system that accurately accounts for the important implications of such sitting decisions.

I concur in the President's recommendation to Chairman Randolph on April 28 that the Senate as well as the House should amend the Clean Air Act to preclude

application of all significant deterioration provisions until sufficient information concerning final impact can be gathered.

Sincerely,

ALAN GREENSPAN.

U.S. DEPARTMENT OF LABOR,  
Washington, D.C., June 11, 1976.

Hon. FRANK MOSS,  
U.S. Senate,  
Washington, D.C.

DEAR SENATOR MOSS: This is in response to your letter requesting our views on your proposed amendment to S. 3219, a bill amending the Clear Air Act, as it was reported by the Senate Public Works Committee.

Your amendments provide for a study and a report to Congress by the proposed National Commission on Air Quality on the economic and energy effects of the nondeterioration requirements of the bill.

By way of background I should mention the concern that former Secretary Dunlop and I stated in our letters to Senator Randolph. In Secretary Dunlop's letter of December 15, 1975 he states his concern that the provisions of section 110(g) "should reflect a proper balance between our interest in maintaining air quality and our interest in job growth." Secretary Dunlop urged the Committee to regard both clean air and job growth as equally important objectives in its consideration of nondeterioration proposals.

In a second letter to the Committee of February 25, 1976 I reiterated that concern and also pointed out the problems involved in determining the potential economic and job growth impacts of nondeterioration proposals. These problems were reflected in various studies done in several industries in which the economic impact of nondeterioration proposals could not be assessed clearly.

I stated that the inconclusive nature of the studies as well as the views of various interested parties (government, labor, industry, environmentalists) "argue for the need for enough flexibility in the proposed amendments to permit both general economic impacts and job impacts to be taken into consideration in improving and maintaining our air quality."

Beyond this, I stated these specific concerns with the bill then under consideration by the Committee:

1. That no provisions were made for a Class III category even though Administrator Train's letter of December 17, 1975 had stated that Class III is necessary for the aggregation of major large industrial sources at one site . . . Class III may be necessary where there is required fuel switching from lower to higher sulfur fuel . . .
2. That care be used in designating Class I areas and the requirement either implicit or explicit for "buffer zones".
3. That the bill did not require the inclusion and consideration of "relevant social and economic data, including job impact data in the development of nondeterioration plans".

The bill as reported provides for the establishment of areas in each State to prevent significant deterioration of air quality.

Class I designated land areas would comprise all international parks regardless of size and each national park, wilderness area and memorial park exceeding 5,000 acres which exists on the day of enactment. Those national parks and wilderness areas established after enactment shall be designated Class I, but may be designated Class II. All other land including Federal lands shall be designated Class II areas.

Each potential new source (manufacturing plant, etc.) which would emit more than 100 tons of a pollutant a year and identified by category in the bill must apply to the State for a permit to construct a new emitting facility in a Class II area.

The Committee rejected a Class III designation which would have allowed the States to set aside some clean air areas for more intense industrial development.

The Committee also eliminated the buffer zone that encircled Class I areas and instead set the Class I increment as a flexible test. We would also point out that State plans need not contain specific economic and impact data.

We continue to feel that the bill should reflect balanced weighing of the **objectiveness of clean air and job growth.** In our previous reviews of studies and

of the views of interested parties together with our reading of the bill as reported and of the accompanying Committee Report, we cannot find an adequate basis for agreeing with the statement on page 21 of the Report that "this section protects clean air areas from deteriorating while permitting the economic development necessary to achieve a steady improvement in our standard of living."

As the President indicated in his letter to Chairman Randolph on May 28, the Administration cannot endorse the changes recommended by the respective Senate and House Committees with regard to significant deterioration of air quality.

I support the President's recommendation to amend the Clean Air Act to preclude application of all significant deterioration of air quality provisions until sufficient information concerning final impact can be gathered.

The Office of Management and Budget advises that there is no objection to the submission of this letter from the standpoint of the Administration's program.

Sincerely,

W. J. USERY, Jr.,  
Secretary of Labor.

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U.S. ENERGY RESEARCH  
AND DEVELOPMENT ADMINISTRATION,  
Washington, D.C. July 11, 1976.

Hon. FRANK E. MOSS,  
U.S. Senate.

DEAR SENATOR MOSS: Thank you for the opportunity to comment on your proposed amendments to S. 3219, a bill which may be cited as the "Clean Air Amendments of 1976."

Section 6 of S. 3219 would add a new subsection (g) to section 110 of the Clean Air Act of 1970, as amended. That subsection would divide the Nation's clean air regions (those areas having air quality better than required under national ambient air quality standards) into two categories in which certain increments of additional sulfur oxide and particulate emissions would be allowed. To enforce the increment limits and thereby regulate development in these regions, states would issue construction permits to all major new pollution sources. These permits would require the new plant to use "best available control technology," as determined by the state in accordance with general guidelines. Section 6 contains increments for two pollutants: particulate matter and sulfur oxides. The Environmental Protection Agency is required to study strategies to prevent significant deterioration for other regulated pollutants, and it is required within one year to inform the Congress of appropriate increment for hydrocarbons and oxides of nitrogen.

Section 37 of S. 3219 would add a new section 315 to existing law. A National Commission on Air Quality (NCAQ), composed of Congressional and public members, would be established to study and report to Congress within three years on the adequacy of the clean air programs, and the implications of implementing such programs.

As we understand your proposed amendments, they would delete section 6 in its entirety. They would also amend section 37 to require the NCAQ to study the economic and energy effects of implementing such a nondegradation policy as proposed by section 6 and to determine whether existing measuring, monitoring, and interpretative capability is sufficient for effective implementation. The NCAQ would be required to report its findings on these matters to Congress within one year.

The Research and Development Plan (76-1) issued on April 19, 1976 by ERDA suggests that by the year 2000 the Nation will need 100 to 400 new fossil fueled power plants, 70 to 140 coal gasification and liquefaction plants, and 40 to 80 oil shale plants. Many of these new energy facilities will be located in clean air regions. Section 6 embodies a first-come, first-served approach for siting such major new facilities. This could result in inadvertently using up available pollution increments before all needed plants are constructed and, therefore, produce bad-land use planning.

Secondly, the long-term consequences of the open-ended directive to EPA to study strategies to prevent significant deterioration from pollutants other than particulate matter and sulfur oxides should be understood before, not after, legislation is passed.

In view of the uncertain and potentially serious implications of section 6 for long-term energy development, ERDA believes that any provision such as section 6 should be deleted and the Clean Air Act amended to preclude application of any significant deterioration provisions so that these implications can be studied before any nonderegulation policy is statutorily enacted. This approach is the one recommended by President Ford in his letter to Chairman Randolph on May 28.

The Office of Management and Budget has advised that there is no objection to the submission of this report from the standpoint of the Administration's program.

Sincerely,

JAMES A. WILDEROTTER,  
*General Counsel.*

MAY 17, 1976.

Hon. FRANK MOSS,  
*U.S. Senate,*  
*Washington, D.C.*

DEAR SENATOR MOSS: In your letter of April 15, 1976, you requested the Federal Energy Administration's (FEA) views regarding the significant deterioration (SD) including best available control technology (BACT) and non-attainment provisions of the proposed amendments to the Clean Air Act. Consultants retained by FEA have just completed two studies with respect to these provisions. An analysis of the overall impact of the SD provisions on energy and economic impacts was prepared by ICF, Inc., utilizing in part FEA's Project Independence Evaluation System (PIES). The implications of SD for surface mining of coal were analyzed by Environmental Research and Technology, Inc. (ERT). Summarized below are the major findings of the ERT and ICF studies and the principal areas of uncertainty with respect to the impact of the Clean Air Act Amendments pending in the Senate.

#### FINDINGS

##### 1. Increased oil consumption—

It is projected by the PIES model that the utility sector will increase its consumption of oil by about 1 million barrels per day by 1990. Over the 1980–1990 period, this would mean that an additional 1.9 billion barrels of oil would be consumed, representing about \$25 billion at \$13 per barrel. One million barrels per day is equivalent to the total crude oil production from the Gulf of Mexico in 1975; it also represents an increase of 68 percent over 1974 utility oil consumption. By further comparison, the Trans-Alaska oil pipeline is scheduled to deliver 600,000 barrels per day in 1977 and 1.2 million barrels per day in 1978.

No authority currently exists to prevent the above projected increase in consumption of oil. The Energy Supply and Environmental Coordination Act of 1974, (ESECA) as amended, exempts combustion gas turbines and combined cycle units from its prohibition against new oil-fired utilities. FEA's authority to issue orders under ESECA expires on June 30, 1977.

If new ESECA legislation were extended and made applicable to all new base load and intermediate generation, (legislation of this type is hereinafter referred to as "New ESECA") the above mentioned energy penalties obviously would not be incurred. However, as indicated below, capital costs for additional sulfur dioxide pollution controls incurred by the utility sector would almost triple.

##### 2. Increased capital costs—

The utility sector would have to spend an additional \$6 billion on sulfur dioxide control equipment in the period 1980–1990. Under New ESECA, these additional capital costs for pollution control equipment would increase to over \$16 billion for the same period.

##### 3. Reduced coal production—

National coal production would be reduced by about 150 million tons by 1990 from current projections of 1.3 billion tons per annum. This reduction represents about 25 percent of current coal production. Over the 1980–1990 period, 825 million tons of projected coal production would not be produced or consumed. Under New ESECA, coal production would approximate that projected for 1990. The regional impacts are important and are examined in the report.

##### 4. Surface-mining—

Production from new Western coal surface mines could be severely constrained by violation of applicable standards for suspended particulates if the SD incre-

ments were applied to such operations. About 90 percent of future Western coal production is expected to come from surface mines. The Senate Bill explicitly identifies a number of types of stationary sources exclusive of surface mining which would be subject to the SD increments, but also provides for "such other major emitting facilities as the [Environmental Protection Agency] Administrator determines to be significant potential sources of air pollutants."

5. Increased operating/consumer costs—

Electricity bills would go up \$4 to \$6.5 billion over the period 1980-1990 depending on whether oil is allowed or not. This reflects an increase in electricity rates of 0.6 percent on a national average basis, and of 2.4 percent for the high percentage change geographic region, by the year 1990.

#### UNCERTAINTIES

1. Important uncertainties regarding the implementation of the proposed amendments, which could result in the understatement of their impacts, include:

How the Best Available Control Technology provisions would be interpreted, Which atmospheric dispersion models and meteorological assumptions would be employed,

What the effects of terrain and the location of other facilities would be on the emission reductions required of a single facility,

How many areas would be designated as Class I on a discretionary basis, in addition to those which would be mandatory Class I,

What percentage of the SD increments would be allocated by the states to each new facility.

For example, it is possible that emissions reductions below those achievable with scrubbers on high sulfur coal in the East could be required. This requirement, which would require scrubbers and low sulfur coal, could increase the impacts summarized above.

2. It is unclear whether the SD provisions would provide a substantial stimulus for urban development. Further, it appears that the non-attainment amendments would not substantially relieve the constraints of the current Clean Air Act on urban development.

3. The SD and non-attainment provisions could lead to substantial delays in siting new facilities.

4. Natural violations of National Ambient Air Quality Standards could inhibit industrial development.

We are enclosing for your reference a copy of the Executive Summary of the ICF report. We expect to deliver a copy of the full report to you when it is available. Also enclosed is a copy of the ERT report.

Finally, annexed to this letter for your information is a listing of additional on-going studies by Federal agencies related to the proposed amendments.

Transmittal of this letter has been approved by the Office of Management and Budget.

Sincerely,

FRANK G. ZARR,  
*Administrator.*

Enclosures.

#### ONGOING SIGNIFICANT DETERIORATION AND NONATTAINMENT STUDIES

##### A. FEA Studies—

Growth Impacts in the Chemical and Petroleum Industries in Selected Areas Where NAAQS are not Being Attained.

Interface of Significant Deterioration and Non-Attainment Requirements for Major U.S. Cities.

##### B. Joint FEA/EPA Studies.

Impact of Significant Deterioration on the Location/Size of Synthetic Fuel Facilities.

Impact of Significant Deterioration on the Copper Smelting Industry.

##### C. Other Agency Studies—

Impact of Clean Air Act on Industrial Expansion [several major industries to be studied], including Impact of Non-Attainment Provisions on Expansion in Petroleum Storage, and Petroleum-Refinery Industries (EPA).

Impact of Significant Deterioration on the Pulp and Paper Industry (EPA).

An Analysis of the Impact of Alternative Approaches to Significant Deterioration in the Non-Ferrous Metals Industry (DOC).

U.S. DEPARTMENT OF THE INTERIOR,  
Washington, D.C., May 3, 1976.

Hon. FRANK E. MOSS,  
U.S. Senate,  
Washington, D.C.

DEAR SENATOR MOSS: I appreciate very much your concern with question of Utah natural resource management raised in your April 15 letter to me. More particularly, I share your concern about the pending Clean Air Act amendments, especially the significant deterioration provisions.

As you know, the Environmental Protection Agency has developed a comprehensive set of regulations in response to the Supreme Court's 1973 "significant deterioration" decision, *Sierra Club v. Ruckelshaus*. These regulations provide for division of areas with cleaner air than the primary sulfur oxide and particulate standards into three classes. Relatively little additional pollution would be allowed in Class I areas, limited deterioration would be allowed in Class II and pollution up to the primary standards would be allowed in Class III. Each class specifies the increment of additional pollution allowed beyond a determined base level of pollutant concentration.

As reported, S. 3219 allows states to use only the Class I and Class II designations and mandates as Class I designation for certain Federal lands, e.g. national parks and wilderness areas over 5,000 acres. Your letter and draft floor statement correctly observe that the bill will place substantial constraints on growth and resource use. In contrast, the EPA regulations contain desirable flexibility to accommodate other valid concerns as those you have suggested, while still protecting air quality. We are, of course, not in a position to say that the EPA regulations are the "last word" in resolving the significant deterioration issue appropriately, but they represent what I think is as good a resolution of these questions as I have seen based on presently available data.

Your letter and statement also discuss the adequacy of information available to make the necessary decisions regarding clean air and resource management. I am deeply concerned about this and believe that we should press forward with obtaining the basic data required.

This, of course, does not mean that we should forbear action and decision until the last "i" is dotted and "t" is crossed in the last study of these issues. But, we should be attuned to the need for adjustment and flexibility, and in this regard, I commend the EPA regulations, or something like them, to the Senate, as it prepares to pass a bill.

Sincerely yours,

THOMAS S. KLEPPE,  
Secretary of the Interior.

Mr. Moss. I wish to discuss the Moss amendment, which I am hoping we can get up for consideration.

I believe its essence is too important, and the parliamentary attempt to deny this body the opportunity to consider this amendment and allow intelligent debate and reasoned dialog would deprive this body of the opportunity of understanding fully what that amendment does.

Technically, the Moss amendment amends section 37 of the committee bill by inserting a new subsection (a) and then adding two additional new subsections (b) and (c). The essence of section 37 then remains in place.

Section 37 of the committee bill establishes a National Commission on Air Quality—similar in scope and makeup as we enacted for the clean water bill. Its charge is to study and report to Congress on six major areas:

First, the economic, technological, and environmental consequences of achieving or not achieving the purposes of this act and programs authorized by it;

Second, available alternatives, including enforcement mechanisms to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and to achieve the other pur-

poses of the act, including achievement and maintenance of national ambient air quality standards and prevention of significant deterioration of air quality;

Third, the technological capability of achieving and the economic, energy, and environmental impacts of achieving or not achieving required emission control levels for mobile sources of oxides of nitrogen—including the research objective of four-tenths gram per vehicle mile—in relation to and independent of regulation of emissions of oxides of nitrogen from stationary sources;

Fourth, air pollutants not presently regulated, which pose or may in the future pose a threat to public health or public welfare and options available to regulate emissions of such pollutants;

Fifth, the adequacy of research, development, and demonstrations being carried out by Federal, State, local, and non-governmental entities to protect and enhance air quality;

Sixth, the ability of—including financial resources, manpower, and statutory authority—Federal, State, and local institutions to implement the purposes of the act.

The Moss amendment retains this charge of the commission in its entirety but enhances it by adding three new responsibilities related to the new thrust of no significant deterioration. If we are to choose to enhance our air by requiring no significant deterioration, we should enhance the charge of this national commission to let us know how its implementation will affect the Nation. After all, the whole episodic case for nondeterioration is based on the word "enhance".

The first additional charge required by the Moss amendment is that this national commission will also study and report to Congress on "the effects of the implementation of any proposed or existing requirement on the States or the Federal Government under this act to identify and protect from significant deterioration of air quality, areas which have existing air quality better than that specified under current primary and secondary standards."

Surely, if this body is to enact the most far reaching and encompassing air pollution requirements ever considered in the Congress of the United States, it should certainly require an assessment of how this will affect the Nation.

The Moss amendment then adds two new subsections, (b) and (c). Subsection (b) is the heart of the Moss amendment and reads:

Studies and investigations conducted pursuant to paragraphs (a) (1) and (2) shall include:

(1) the effects of existing or proposed national ambient air quality standards on employment, energy, and the economy (including state and local), their relationship to objective scientific and medical data collected to determine their validity at existing levels, as well as their other social and environmental effects; and

(2) the effects of any existing or proposed policy of prohibiting deterioration of air quality in areas identified as having air quality better than required under existing or proposed national ambient standards on employment, energy, the economy (including state and local), the relationship of such policy to the protection of the public health and welfare as well as other national priorities such as economic growth and national defense, and its other social and environmental effects.

Subsection (c) states:

The Commission shall, as a part of any study conducted under subsection (a) (1) of this section; specifically identify any loss or irretrievable commitment

of resources (taking into account economic feasibility), including mineral, agricultural and water resources, as well as land surface-use resources.

These questions are valid. And yet the answers to these questions are not presently available. Before we act on this far-reaching legislation, let us determine whether the policy of nondeterioration is needed, does it really enhance health and welfare at an affordable price tag, and if it is really the way to allocate our resources for the benefit of the Nation. These provisions are far too important to be acted on hastily.

Study of the nondegradation concept and the adequacy of the information on which that policy is based is necessary. We need to know the answers to a host of questions. For example:

What land areas will be covered?

How will the law apply to those States which are currently experiencing or are expected to experience future economic growth?

What will the economic impact be in terms of jobs, incentives to build abroad, anticompetitive effects, costs of construction delays?

Development of our energy resources?

National security and national defense?

What are the health and welfare hazards in light of the fact that the proposals set restrictions which are more limited than those imposed by the present national health or welfare standards?

What are our present technical air monitoring capabilities?

Are they sufficient to intelligently implement and administer the legislation we are considering?

The answers to these questions are not presently available. Yet they form the critical factual case necessary for making the major planning judgments which the nondeterioration provisions imply. Everyone is for a healthy environment. But everyone is equally supportive of a healthy economy. We need to know if the microcosmic increments to be imposed on the Nation by nondegradation standards is in harmony with the macrocosmic scale of our national economic security and our national defense security.

For this reason the second major provision of my amendment is to delete section 6 of the committee bill. This is done to avoid enacting into a law a nondegradation program whose consequences on the Nation—and I stress these would become permanent consequences—are unknown at this time.

Now, it seems to me it is lame to say—

Well, let us enact section 6 and have a study and then, after the study is in, come back on this floor and the floor of the House and begin an argument about how we should amend section 6 because of some of the factors that were turned up in the study.

How much wiser it is not to go to section 6 until we know the impact, and then put it into law, if that is the will of this body and the President of the United States, and if we do that then we will not find ourselves trapped into something that we could not foresee.

I would like to present a map that had been drawn for me taking data that come from EPA itself in most instances, and other sources where EPA does not have the data, and these data will show on overlays on the map that we are excluding vast areas of our country from any further development if it increases the increment of SO<sub>2</sub> or particulates, and if we do that we have limited large areas of our country from any further economic development.

In my own State, where we are now under great pressure to produce a lot more coal because we need the energy, additional type of energy, we are building new towns and we are building power generating plants, mine-mouth plants, in order to generate electricity, and we are exporting vast amounts of coal.

I was in a mine in Utah just 2 weeks ago where the total tonnage of that mine goes on a unit train every day all the way back to St. Louis where it is put on a barge and it goes up the Mississippi and up the Ohio. That coal is sold on a long-term contract to companies generating electricity on that river.

They are even selling coal into Pennsylvania. It is interesting as to what the great demand is for coal. That is the reason we are expanding so rapidly, and that is the reason we finally are being able to put to use a vast resource in my State and a vast national resource, because we have great coal beds. It is low-sulfur coal and very desirable. The reason they bring this coal all the way to Pennsylvania is to mix it with the other coal they have and bring down the sulfur content so that they can meet EPA standards that have been set now on emissions back there.

But these are the economic, population and demographic problems that are brought up by section 6, and I want to know the answers. So I do not want section 6 in the law until I know what the answers would be if we imposed the standards of that section on the country at this time.

Deletion of section 6 is the only prudent decision to make. The Moss amendment does not avoid the issue of nondegradation. What it does is bring full attention to it by enabling adequate and necessary studies by Federal agencies and the State governments that will be required to enforce a nondegradation law, and by industries that will be required to comply.

The Moss amendment does not negate congressional responsibility to legislate national policy. I fully concur that this issue must not be left for the courts to interpret, but for the Congress, as the legislative partner of this country's Government to determine. The Moss amendment does not take away this congressional prerogative, but rather wisely provides for the necessary postponement of a lasting decision until we can truly assess all ramifications of this proposal. We must insure that the embryo we create by a one-time vote does not grow into a helium-filled bureaucratic monster hovering over our Nation's prosperity.

If we are to push the Nation down a more restrictive path of environmental regulations, business, labor, State and local officials, scientists, economists, and consumers—the mainstream of American life—have the right to participate in the analysis and determination of this important issue. This is what public acceptability is all about.

Unless we vote with confidence that all of our society be adequately protected, we may live to reap a national vote of no confidence in what we have wrought. Without it there will be no public acceptability.

The Moss amendment goes to the very heart of the necessity for public acceptability. It is intended to seek the answers people want to know—on how this proposal will affect their jobs, their energy resources, their economy as well as the environmental and other societal effects on them. The Randolph amendment does not do this. The im-

portance of public acceptance of the purposes of the Clean Air Act, brought about through understanding of the issues and knowledge that they are necessary and proper, has been an important theme stressed by the committee members—during present floor deliberations on Tuesday, and during the committee hearing process. The junior Senator from New Mexico eloquently expressed this need for public acceptability of the purposes of the Clean Air Act on Tuesday, and we adopted his two amendments related to transportation control plans which gave local governments more participation and involvement in the planning process for implementing these programs that will affect them.

In the committee record EPA Administrator Russell Train addressed this issue. Let me read to my colleagues his remarks from the March 19, 1975, hearing record on the need for public acceptability of environmental law, and the fact that it is not just environmental but social as well:

I think that one of the areas which it is important for the Congress to address and to discuss with us are not only the energy and economic nonenvironmental factors which are important, but I would also add the social aspects of some of these programs.

I am thinking particularly of transportation control plans, for example, and the impacts on traditional patterns of behavior in communities and the country.

I suppose nondegradation would perhaps fit into the same kind of areas. Here I think elected representatives of the people have a particularly sensitivity to these facts of our programs which are very important for us to receive guidance on.

I continue to quote from Russell Train:

They are not strictly technical questions. I think you can look to us and should look to us for advice on strictly technical matters. But many of these things go beyond technical matters. They go to the whole range of public acceptability. Here is where I think we do need the Congressional input most particularly.

During March 20 testimony, the chairman of the Environmental Pollution Subcommittee spoke on the philosophy of the need to study issues—surely this same philosophy would apply to the most important provision of this bill—nondegradation—and the philosophical theme of public acceptability. To quote the chairman:

Without belaboring the procedure, I think Congress would find it valuable to not only have the finished product, but the inputs of the particular agencies so that we can put the finished product in its total perspective. I suspect there are other agencies than EPA on the environmental side, as well as the energy side. We would like to be able to evaluate the finished product in the context of those individual inputs.

Of the six agencies who responded and who has concern about environmental degradation, five favored the Moss approach of not enacting section 6 until such time as a full study had been conducted, and only EPA came back in favor of the committee version and against the Moss amendment approach.

Here the chairman has said, "I suspect there are other agencies than EPA on the environmental side."

Well, if the environmental side is in opposition to the Moss amendment, his prediction turned out to be wrong. The only one that came back favorable to the committee side as now written was EPA.

A major question that is being raised is what areas will be covered by this nondegradation policy. No one seems to know what air sheds

will be included, and on a county-by-county basis how specific areas will be classified. According to the committee bill those areas presently meeting secondary standards for either or both total suspended particulates and sulfur dioxide emissions would be classified as class II. In the committee bill the maximum allowable class II pollution increment for particulates is 10 micrograms per cubic meter on an annual basis; and 30 micrograms per cubic meter on a 24-hour basis. Who in this Chamber understands this measurement? And yet some would like to adopt it for the Nation. The present national standards for this pollutant are 75 micrograms per cubic meter on an annual average; and 260 micrograms per cubic meter on a 24-hour basis. This proposed new national requirement would reduce from 260 to 30 in a given 24-hour period the allowable pollution emission of industrial sources. Can it even be done? Who knows? What studies have been conducted to verify capabilities? The answer is none.

The class II increment standard for sulfur dioxide becomes 15 micrograms per cubic meter on an annual basis in the committee bill, compared with the number 80 under existing law. On a 24-hour basis, it drops to 100 micrograms per cubic meter from presently allowable 365 micrograms per cubic meter. But the committee bill goes even further and imposes a 3-hour emission requirement not to exceed 700 micrograms per cubic meter, compared with 1,300 under existing law.

To quote directly from the committee report, page 23:

The chief tool to be used in implementing the no significant deterioration requirements is the permit that must be issued by the state for any major emitting facility to be located in any clean air area, including Federal lands. The permit must include an emission limitation based on best available technology. It must insure that total emissions from the facility are such that the increments will never be exceeded.

Otherwise, the State cannot grant a license to permit the building of a plant.

Will there be any industry in this Nation's economic structure that would dare to invest millions, indeed billions of its capital—capital that comes in large measure from the investments of the little people, the working people, the retired citizens' savings—in a venture that may never exceed miniscule increments we neither understand, know if they are possible to achieve, or if they are even necessary for protecting visibility, let alone public health?

What land areas will be affected? This is an unknown. In floor debate the chairman of the Environmental Pollution Subcommittee advised that you cannot draw maps of land areas that could be affected—that they are not only inappropriate but irrelevant. Yet we would like to have some idea of what areas in the Nation will be subjected to these increments. Based on EPA data and that from individual State environmental agencies, using the bill's language that those areas presently achieving national standards for particulates and sulfur dioxide, approximately 80 percent of the land mass of the continental United States, could be included in this new sweeping regulatory program.

Mr. STONE. If the Senator from Utah carried through his example of the low-sulfur coal mined in Utah, and which proceeds by barge and otherwise until it gets to Pennsylvania and is there mixed with coal in order to reduce the sulfur content, would the Senator answer what might happen to the resulting air quality of coal from the Pennsylvania area were it not able to be mixed with lower sulfur coal from

the western area if the restrictions of this section 6 were opposed to prevent the further development of the low-sulfur coal?

Mr. Moss. Obviously, in the Pennsylvania area and elsewhere we already are bumping against or exceeding the ceiling of  $\text{SO}_2$  in the atmosphere coming from their generating plants. That is the reason they can economically afford to send to Utah and bring in low sulfur coal to mix with it. If that ceiling is reduced still further, either in Pennsylvania or in Utah, then they either cannot economically continue and must shut their plants down or they have to go to another fuel. Maybe they have to appeal to get petroleum again, or natural gas, which we all know we want to conserve because our reserves are diminishing. We want to get other sources of energy.

In Utah, we would lose a market and have to lay off people. It would be an economic catastrophe on both ends, I believe.

Mr. STONE. Environmentally, would it not be the case that the mix of higher sulfur coal would be barred from the use of lower sulfur coal in terms of perfecting the air quality when related to the use of coal?

Mr. Moss. It very well could be. If that is the case, we have defeated our purpose of trying not only to improve our air quality but to keep our eye on economics, job requirements, and energy requirements of our country.

Mr. STONE. Will the Senator from Utah explain to us why the specific numbers are in this bill in terms of nondegradation, that is, the exact numbers of particulates permitted and increments permitted? What is the evidence that only those numbers are the correct numbers, whereas either higher or lower numbers would be incorrect?

Mr. Moss. That is what I have not been able to determine: how those numbers were procured and how the judgment was made that they represented the ceilings that must be imposed. As I pointed out, the existing ceilings and the ones proposed in this bill drop so drastically that, without being a scientist, it just looks to me like the lowering of feasibility is catastrophic. It is like a factor of 10 or more in what must be dropped in emissions of either particulates or  $\text{SO}_2$  under the figures that I read.

I have not read all of the record, but I have not read any place where it was calculated to say, "This is the optimum ceiling for these reasons," and then talk about health, welfare, and visibility. I would like to add economics, jobs, energy, and the rest of it.

I would characterize it as just an arbitrary situation that was made in and by EPA.

Mr. STONE. If there were a commission study such as the Moss amendment describes, then those numbers and any competing numbers could be studied on a region-by-region basis, if not even more locally applied than that, to determine, with air currents in such areas, with land surfaces, sea surfaces, and water surfaces in such areas, mountain areas, and other topography, climatic conditions, what the impact might be environmentally. Otherwise can we really know what the impact of these numbers will be, for example, in a flatland area with sea breezes compared to a mountainous area without sea breezes?

Mr. Moss. We cannot determine what we need. What this body should have before it is a model saying that with these levels this would be the result, and with another particular level it would be here. Then we can look down the list, and decide as a legislative body what we

think those optimum numbers could be. If those that are arbitrarily presented to us can be justified, that is fine. Let the legislative body then decide upon it. But if they cannot be justified, let us find where they can.

We always have to have all of the objectives in view. Overlooked, in my opinion, is that they look only to environmental purity, which, of course, we all want, and esthetic concerns, and then do not look beyond to say there are other things that must be considered.

I want to consider esthetic concerns. I want to have environmental purity, as nearly as we can have it. But I do not want to do those in a vacuum, aside from other considerations that ought to be out there for us to see.

Mr. STONE. The Senator from Florida does want additional protection and does want reduction in permitted particulate emissions on  $\text{SO}_2$  and other things. But the Senator from Florida wants to operate on the basis of information, on the basis of specific, scientific recommendations, not only in the area of climatic and regional differences but in the area of what it costs. Then, when the costs can be determined on the basis of an objective study—not a legislative but an objective study, out of the legislative process—doing a scientific job of analyzing and finding the facts, the Senator from Florida is perfectly ready to vote for further and additional restrictions. But to fly blind seems to the Senator to be a little bit wild at this stage.

Mr. MOSS. Senator from Florida that as long as I can I will stand on this floor and insist that we have that opportunity to deal with the legislation so that we have a study and have that information before we write into law, before we cement in the ceilings and the requirements that are set forth here in section 6.

What I was talking about is the class II designation. It is in addition to the National Parks, wilderness areas and memorial parks exceeding 5,000 acres, which exist on the date of enactment, that would automatically become class I.

The class I no significant deterioration increments for particulates in the committee bill are;

Five micrograms per cubic meter on an annual basis and 10 micrograms per cubic meter in a 24-hour period; this compares with 75 micrograms per cubic meter on an annual basis and 260 micrograms per cubic meter in a 24-hour basis, respectively, for the national primary standard; and 60 micrograms per cubic meter on an annual basis and 150 micrograms per cubic meter in a 24-hour period for the national secondary standard.

The class I no significant deterioration increments for sulfur dioxide are 2 micrograms per cubic meter on an annual basis, 5 micrograms per cubic meter on a 24-hour basis, and 25 micrograms per cubic meter on a 2-hour basis; the national primary standard is 80 micrograms per cubic meter on an annual basis and 365 micrograms per cubic meter on a 24-hour basis; and the secondary standards is 1300 micrograms per cubic meter on a 3-hour basis.

These are areas where individual States, working with their citizens and with private industry, have made the effort to clean up. Is the reward for the huge expenditure of dollar resources and human resources and skills that if you have attempted to comply with the letter of the law and even go beyond, you will now be forced to go even

stricter—at a tremendous economic penalty—in terms of limited industrial expansion, potential job loss, and potential lost revenues to a State's tax base from expansion that cannot now take place under no significant deterioration?

The junior Senator from Florida raised the very valid question on the floor of what air sheds in his State would fall under this classification. His question was dismissed out of hand as irrelevant. I say it is relevant. Florida ranks eighth in the Nation in population. Do not its citizens have the right to know how their homes and livelihood will be affected? Florida is also one of our most prestigious States where retired people have chosen to live—the good life.

These are people living on fixed incomes. What will the economic consequences to them be individually if utility rates increase as a result of no significant deterioration—the Florida Public Power Co. estimates that it costs to serve customers will go up by \$120 to \$300 million. What will be other potential price increases applied against their fixed income?

Gentlemen, individual maps of all the 50 States have been drawn showing the areas in your States that are now meeting the required standards under present law for particulates and sulfur dioxide, and which would therefore be subject to the new more strict class II standards. These are placed on your desk for reference and you may find it of interest to look over these maps. It may be noted that these are not “buffer zone” maps. The committee advises that their bill is a no buffer-zone bill—though how in the world you achieve protection of pristine areas without some sort of buffer around them is beyond my comprehension.

With respect to the fact that the class II increments established in the committee bill are far more restrictive than present law, I think it is important to make note of the difficulty of some areas in attaining the current particulate levels. If nonattainment at the high levels prescribed by law is a compliance problem, how much greater will the problem be compounded by enacting even stricter standards?

In a followup letter from Administrator Train to the committee dated May 12, 1975, let me quote on the problem of attaining particulate standards for the ambient primary and secondary standards:

DEAR MR. CHAIRMAN: Your letter of February 28, 1975, raised important questions related to progress in implementing the Clean Air Act. At this time, I would like to provide additional information on this progress and present some of the problems, as well as suggested solutions, that have emerged during the last four years of implementation. The enclosed information provides an assessment of our status in relation to the standards set pursuant to the Act, summarizes problems encountered in attempting to achieve statutory goals, and provides our assessment of possible solutions to these problems. This material will amplify my testimony at recent Clean Air Act implementation oversight hearings.

First of all, I would like to point out that significant progress has been made in improving the Nation's air quality under the provisions of the Act. Air quality trends show continued decreases in air pollution across the Nation. However, a number of air quality control regions will not meet the ambient air quality standards by the statutory deadlines, in many cases due to circumstances either beyond the reach of regulatory action or controllable only at a cost unforseen at the time of the Act's amendment in 1970.

Specific problems are discussed in the context of the status of efforts to meet the national ambient air quality standards through the State Implementation Plans. Legislative amendments that we have proposed to the Congress for solving

some of the problems encountered are mentioned in the discussion on progress and impediments. The topics generally follow those set forth in your letter.

If I can be of further assistance, please let me know.

Sincerely yours,

RUSSELL E. TRAIN,  
Administrator.

The chairman of the subcommittee that reported this bill is now claiming that the primary and secondary standards in our present law are not adequate. That they were only intended to clean up dirty air areas—our cities—but they are not good enough for clean air areas. If these standards are not good enough for clean air but only for dirty air, what about all the millions of citizens who live in these teeming cities? Did we adopt substandard standards and margins of safety for their protection? This hypothesis that the present national ambient primary and secondary standards are not good enough for clean air, to my knowledge, was never discussed in neither the hearings or the markup. That what we have is no good. After 5 years and billions of dollars spent to meet these standards, and many court orders and compliance orders and industry harassment are we now to believe that it was all for naught?

Let me quote from the transcript of these committee hearings from respected government witnesses, including the Administrator of the Environmental Protection Agency, the Honorable Russell Train, and members from the scientific community—all attesting to the fact that the primary and secondary standards are good and adequate:

Hon. Russell Train—March 19, 1975:

The cornerstone of the Act rests on air quality standards. In 1971, EPA set standards to protect the Nation's health and welfare for six major air pollutants: sulfur oxides, particulate matter, nitrogen oxides, hydrocarbons, carbon monoxide, and photochemical oxidants. These standards have been the subject of extensive debate since that time. Both the research community and industries subject to regulation have debated their propriety. I believe we have put these arguments to rest: Our continuing review and the studies undertaken by the National Academy of Sciences on sulfur oxides and on the motor vehicle related pollutants continue to support these standards.

Progress has been made in attaining the standards by the relevant dates. The mean annual average concentrations of sulfur dioxides have decreased 25 percent and mean annual particulate matter levels have decreased 15 percent from 1971 to 1974. *Problems still exist however, in urbanized areas particularly with the 24-hours standard for these pollutants.*

Let me remind Senators that the no significant deterioration class II increments for these pollutants are far stricter than the present ones that certain areas are even now having problems with.

To continue Mr. Train's quote:

It is anticipated that approximately 101 of the 247 air quality control regions in the nation will probably not attain the primary particulate standards by the mandated dates. When I speak of nonattainment, I mean the failure to meet national standards at one or more monitoring sites in an air quality control region. This does not necessarily mean that the air quality throughout the region exceeds the standards. The non-attainment may be caused by "fugitive dust," such as soil from arid lands that becomes airborne due to the wind, or by urban "background sources" such as street dust raised by wind and traffic, fires, cooking, aerosols, and conversion of gaseous pollutants into particulates.

There are many areas where the background sources cause an excess of the standards that are set now of particulates and some of the gaseous pollutants. How are we going to deal with this problem of

naturally caused particulates which will be intermeshed with industrialized particulates under the no significant deterioration proposal? How will we be able to monitor which is natural and which is manmade in measuring the limited increment allowed under the committee bill?

Mr. Train also advised the committee:

Occasionally there are circumstances where the setting of performance standards are infeasible. For example, it is extremely difficult and costly to measure emissions from petroleum storage tanks.

And yet, petroleum storage tanks are covered by the Nondegradation amendment—subject to the class II increments—in the committee bill.

Since Mr. Train emphasized the validity of the national standards, let us also note the progress he cited in compliance:

We estimate that there are over 200,000 sources of air pollution nationwide subject to such regulation. Of this number we believe that are approximately 20,000 major sources accounting for 85 percent of the Nation's air pollution burden from stationary sources. Of the identified major sources, 71 percent are currently known to be meeting emission limitations or are meeting compliance schedule requirements. We expect this percentage to rise to more than 85 percent by the mid-1975 attainment.

It is now mid-1976.

The day the subcommittee received testimony from the scientific community whether the ambient air quality standards and the health basis for them was scientifically valid, it was the consensus of the health panel that the ambient standards are proper. The distinguished witness panel which testified on this issue before the subcommittee on April 22 included:

Dr. David M. Anderson, manager, environmental quality control, Bethlehem Steel Corp.

Dr. Benjamin G. Ferris, Jr., professor of environmental health and safety, Harvard School of Public Health.

Dr. John F. Finklea, Director, National Institute for Occupational Safety and Health.

Dr. Herschel Griffin, Chairman, Subcommittee on Health Effects of Air Pollutants, Committee on Medical and Biological Effects of Environmental Pollutants, National Science Foundation.

Dr. John H. Knelson, Director, Human Studies Laboratory, Environmental Protection Agency.

Dr. H. M. D. Utidjian, representing Tabershaw-Cooper Associates, Inc.

#### CAUSES OF NONATTAINMENT

The indicated nonattainment of the standards may occur for a variety of reasons, including lax compliance on the part of sources, although nonattainment is not all attributable to the failure of control measures—A discussion of control efforts is provided later, with a discussion of problems related to unreasonable control measures. The most significant problems related to reasonableness of control measures are related to "fugitive dust" and the urban particulate background in relation to the TSP standards, availability of low-sulfur fuels in relation to the sulfur dioxide standards, and reasonableness of control requirements for hydrocarbons and carbon monoxide in view of the serious social and economic disruption that would ensue

from their implementation. These problems are related to the time-frames established by the act; solutions for most of them could be found if additional time is provided for attainment and an orderly implementation of control measures. The alternatives to providing increased flexibility in attainment dates would be a legally difficult position—attainment will be impeded by the nature of the problems regardless of the statutory requirements.

#### A. PARTICULATE MATTER (TSP)

Two distinct problems have been noted which may affect the attainment of the national particulate matter standards. These problems include the impact of fugitive or windblown dust on air quality, particularly in the West where windblown dust from farms, unpaved roads, and construction sites may cause high ambient concentrations.

The second particulate problem involves the high background concentrations in many urban areas. It is believed that numerous miscellaneous sources contribute to high background concentrations such that the attainment of national standards may be difficult without the application of new and long range control techniques. Background sources include: tire particles, pollen, vegetative matter, sand and soil particles from snow control, windblown dust from exposed surfaces, reentertainment of street dust caused by wind and traffic flow, as well as secondary particulate formation in the atmosphere from the conversion of gaseous pollutant emissions by complex atmospheric transformations.

Preliminary evaluations in major problem cities have indicated that the measures necessary to attain national standards for particulate matter would include: conversion to gaseous fuels, extremely stringent emission limitations, elimination of small incinerators, extremely low sulfur content fuels, elimination of additives—such as lead—in fuels, comprehensive fugitive dust control, and stringent control of hydrocarbons to reduce photochemical formation of aerosols. Replanning of future growth and development would also be involved in at least some areas. Although long-term solutions may be feasible, these solutions are not currently available for implementation. Proposed amendments to the act would permit consideration of these factors in extending attainment dates and in selecting control measures that are to be implemented.

#### COMPARISON OF MOSS STUDY WITH RANDOLPH STUDY

Before we vote on this issue, we should compare what the Moss study would accomplish versus what the Randolph study would not. What the Moss study would do versus what the Randolph study would not—bearing in mind that in the Randolph amendment section 6 would remain intact and thus become law—his study would be assess the law; my proposal would set aside section 6, not giving it sanction of law, until we know if it is proper and necessary.

It is essential that there is clear understanding of the aims and objectives of these two studies. For they are far different. The Moss study will address all the questions that have been raised on proposed nondegradation—how it will affect our jobs market, our economic structure, our energy requirements, and a host of other real-world

concerns. The Randolph study does not address any of these issues—its main thrust is to determine if the nondegradation measure—and remember this would be the law of the land—and considerably more restrictive than present law—is strict enough or should be made even more stringent.

The Moss study that the National Air Quality Commission, to be created, would include a specific list of vital concerns. The Randolph amendment does not. What would be the result of the Moss study compared to the Randolph upon their completion—and the Moss study is set for 1 year, and so would not drag out—while the Randolph study provides for 2 years—we would be into the results of 2 years of implementation of nondegradation at that time. Would it even be possible to reverse such law if it is proven unwise?

Let us do a side-by-side comparison of what the Moss study will question compared to what the Randolph study will not. The following list of issues to be covered by the Moss study is aimed at determining the effects of nondegradation on these basic issues. We would seek and find the answers and know in advance what would result, not see in hindsight the aftermath. The Moss study will seek answers for and resolve uncertainties on these issues—the Randolph study, since it does not even address them, would leave the same gaping question marks that have created this controversy:

#### ISSUE, MOSS STUDY, AND RANDOLPH STUDY

Assess effects of nondegradation on:

Employment: Moss, answer; Randolph, ?.

Energy, Moss, answer; Randolph, ?.

The economy—including State and local economies: Moss, answer; Randolph, ?.

Relation of new standards to objective scientific and medical data: Moss, answer; Randolph, ?.

Relation on new standards and environmental effects: Moss, answer; Randolph, ?.

Economic growth: Moss, answer; Randolph, ?.

National defense: Moss, answer; Randolph, ?.

Protection of public health: Moss, answer; Randolph, ?.

Identify any loss or irretrievable commitment of resources, including:

Mineral resources: Moss, answer; Randolph, ?.

Agricultural resources: Moss, answer; Randolph, ?.

Water resources: Moss, answer; Randolph, ?.

Land surface use resources: Moss, answer; Randolph, ?.

As demonstrated, the Randolph amendment would not address any of these valid questions—would answer none of them. If there is controversy and conflict now under administrative regulations, what will ensue over a public law that remains unresolved? Instead, the total thrust of the Randolph amendment is to decide, upon completion of a 2-year study, if the nondegradation increments contained in section 6 of the committee bill go far enough to protect cleaner than clean air. The Commission that would be set up by the Randolph amendment is specifically directed to determine the following:

First. If the provisions of the bill are appropriate to protect the air quality over lands set aside, and to come up with recommendations and methods to add or delete lands from such designation; and provide appropriate protection of the air quality over such lands.

Just as the list of real-world concerns, bread and butter issues, is the heart of the Moss amendment, in comparison, the heart of the Randolph amendment is to determine if we need to go yet further than we

are now contemplating—exclusively for the sole criterion of air visibility protection without any regard for equal protection of equally significant human concerns of daily life that are as natural to a modern society as the very air we breathe.

Let us review debate on this issue. The chairman of the Environmental Pollution Subcommittee advised this body that the lawful primary and secondary standards were not good enough for clean air—they were only ever intended for dirty air. And yet the standards were adopted and verified as those necessary to protect public health and welfare. Indeed one of the main protective requirements for the secondary standard—which is stricter than the primary standard, and thus more costly to comply with—is to protect visibility. We are further being advised that the present law is not adequate to protect animal life, vegetation, crops, and the like. But again, the protective requirements of the secondary standard are such to fully protect and preserve these welfare standards. Let me read to you from the law the definition of the secondary standard:

Section 109(b) (2)—Any national secondary ambient air quality standard prescribed under subsection (a) shall specify a level of air quality the attainment and maintenance of which in the judgment of the Administrator, based on such criteria, is requisite to protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air. Such secondary standards may be revised in the same manner as promulgated.

Title III, section 302(h) defines "Welfare":

All language referring to effects on welfare includes, but is not limited to, effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation as well as effects on economic values and on personal comfort and well-being.

In short, the present law provides the protection for, by virtue of already very strict secondary standards, crops, vegetation, animals, wildlife, weather, visibility, and climate. These are the areas that proponents of nondegradation are now claiming are not protected under the law.

We are now being told that the secondary standard of the law is inadequate despite the fact that it is very clearly written into the law that it is adequate and proper protection and despite the fact that the highest official of the Environmental Protection Agency and members of the scientific community testified in justification of our present standards in oversight hearings. We are being asked to adopt a tertiary standard, far more stringent than the secondary by virtue of section 6, and we now are being asked, by virtue of the Randolph amendment, to perhaps make it even more restrictive in a few years. Where will this end?

The chairman of the Environmental Pollution Subcommittee advised us on this floor that we want to avoid requiring plants to be forced to retrofit later, at tremendous cost, if they are not adequate to meet new standards. Part of his argument for us to adopt section 6 is to avoid the "evils of retrofitting plants," but now we have the Randolph amendment—whose results may show us that if plants now spend millions of dollars to put on scrubbers to meet the section 6 standards, and we do not even know if this will be enough, we may then be required after this 2-year study to rip down and retrofit with additional pollution control equipment at inestimable cost. Gentleman,

I say to you that it has been eloquently argued that we need to adopt section 6 to end the confusion—that industry is not constructing new facilities now because they do not know the rules, but section 6 will give them the certainty they are waiting for. But the Randolph amendment gives cause for alarm. We are not going to see new plant growth until after the 2-year Randolph study. Industry will be again forced to wait and see what the Federal bureaucracy requires them to do.

In addition to the main directive of the Randolph amendment on whether the class I and class II nondegradation increments are strict enough, his study includes other key areas that fully demonstrate the committee bill does not have the answers necessary for certainty and planning of economic growth. The other required issues to be covered by the Randolph study include:

First. Should the lengthy list of industry sources now covered by the nondegradation increments in the section 6 be expanded?

I ask: If the committee is so certain that this bill is necessary and proper, why do not they have this answer?

Second. Are the nondegradation increments for class I and class II in the committee bill adequate?

I ask: If the committee claims it has not selected arbitrary increments—as some seem to claim—why is there a need to study if their increment numbers are adequate?

Third. Are the models to be used and the monitoring devices adequate to protect the class I and class II areas set aside in the committee bill?

I ask if the committee is not satisfied that the modeling to be used is appropriate, and the monitoring devices adequate, can they disclaim the concern of industry that since there is so much controversy over proper modeling, to try to implement the law will only result in endless lawsuits over whose model is correct?

Fourth. Is the technology that will be required to implement these provisions available?

I ask if the committee does not know if the technology is there or can become available, how is nondegradation to be implemented?

A careful reading of the Randolph amendment of itself provides the full justification for delaying enactment of section 6 into national law. This amendment is an admission that the committee which reported this bill, and expects us to adopt, does not know enough about the increments it has designated as gospel. It is an admission that the committee is not even certain if the necessary technology to implement the provisions is available or will become available. It is an admission that the committee does not know enough about the modeling techniques that are fundamental to implementation.

The chairman of the Public Works Committee is urging us to adopt section 6, and yet his amendment, by its very content of questions, should be enough to convince us that we will be voting a measure into law that is laden with basic unanswered questions. In all my years in the Senate, I must confess I am nothing short of consternated that we are being so eloquently urged to vote a measure that the committee itself, by virtue of the written admission of the Randolph amendment language, is presenting to us as a "pig in a poke."

This controversy of nondegradation or not has now been going on for 5 years—and the controversy is because Congress in 1970 did not

make clear what it meant. Now we have this issue before us for the first time as a legislative matter—and it should be—it should not be for the courts to interpret or the EPA to carry out by fiat. But are we now to vote out a final product and still not make clear what it means—or worse, not know what it means?

If the committee, by virtue of the Randolph amendment, admits it does not have any of the answers on whether the increments are proper or not, if there is technology to implement it or not, if the modeling technique is proper or not, if enough sources are covered or not, how in the world are the State and local governments who must issue the permits and monitor the air quality and determine who can build and where and how much—how are they to know? How is industry to know what it can and cannot do, what it must and must not do?

At a time when American people are demanding less government intervention and bureaucratic redtape in their lives, at a time when the American electorate is vocally expressing lack of confidence in their Government, surely it would be the greatest hypocrisy to vote this measure when we admit we apparently do not even know what we are doing.

After 5 years of total confusion in the courts, is it improper for this body to ask that we allow a 1-year study in order to resolve these unknowns? In reviewing the Randolph amendment, it might even be wise to include some of his questions as a strengthening to the Moss amendment.

Gentlemen, I can only reemphasize that how we vote today in this Chamber on the issue of nondegradation will mold the future economic development of the 50 States of this Nation. If we adopt a national nondegradation law for the entire country, it must be with the realization that we are setting a third, more restrictive standard to supersede the existing primary and secondary standards we previously enacted. It must be with the realization that we will be renouncing as inadequate the standards that we have until today accepted for the protection of health and welfare; it must be with the realization that we are setting on a new course for the Nation without knowing if the new standards are workable; or what the impact of a permanent national law of nondegradation will have on jobs, the economy, inflation, energy requirements of our industrial Nation, additional bureaucratic redtape, and last, but certainly not least, States rights. It will be costly and we must know if this is truly necessary for the Nation.

I for one cannot vote on a proposition of this magnitude without satisfying myself that we at least have some indication of its total effects. I am proud of my environmental record in this Senate, but I cannot be coerced into voting for a measure when I have been given no adequate information that it is a good and environmentally sound way to go. For all these reasons I have sponsored the Moss amendment. It shares bipartisan cosponsorship of colleagues from varying geographic regions and varying economic bases of this Nation.

Gentlemen, the choice is before us. I am of the conviction that there is only one choice: to postpone enactment of national nondegradation until a full assessment is carried forward. Then we will make the final and lasting decision.

Mr. GARN. Without question, the most important provision of S. 3219 is section 6, the nondeterioration proposal, which if adopted, will set the course of future national growth policy of this country and its 215

million citizens. Without question, this is also the most controversial provision of S. 3219. In its present form as administrative regulation of the Environmental Protection Agency, the policy of nondeterioration is being challenged in the courts as too extreme on the one hand, and not stringent enough on the other hand. In this climate of uncertainty, the Clean Air Act of 1970 has come up for amendment. Since present law leaves unclear congressional intent on a national nondegradation policy, it is up to Congress to make this determination.

The amendment offered by the Senate Public Works Committee goes considerably beyond existing law. It is my concern that this amendment may not present a balanced approach between national priorities on environmental protection and necessary future economic development. It is my further concern that this body does not have the necessary facts and inputs to make such a decision of lasting importance to the Nation. For this reason, I cosponsor with Senator Moss an amendment, which shares the bipartisan cosponsorship of 19 Members, which calls for a comprehensive study of the full ramifications of this proposal on our environmental goals, energy self-sufficiency, economic recovery, consumer costs and State and local planning initiatives.

This study would be conducted by a National Commission on Air Quality, to be created under these amendments, which would enable a resolution of all the fragmented and divergent analyses that have been conducted on a "crash basis" over the past months in reaction to the committee proposal.

Surely there is no national emergency that dictates an instant decision by the Congress. Nondegradation relates to esthetic values, not life or death decision on our people's health and welfare. The present law wisely provides this protection. Moreover, the present EPA regulations would remain in force until this study is completed.

Surely this body, if it is to act judiciously and wisely in the public interest, is entitled to all the facts. But it has been argued that there is no need to consider my amendment and that reasoned delay, as I propose, is totally unnecessary. It has been stated that all the facts are known and that this issue has already been "studied to death." It have been stated that the legislative proposal before us has been developed only after extensive legislative hearings, that the committee has received comments from virtually all interest groups affected and has worked closely with State and local government officials.

I wish to draw my colleagues' attention to certain "facts" and "allegations" contained in the May 26 Congressional Record to set the record straight that this body does not have all the necessary facts and inputs to make such a lasting decision that will place an indelible stamp on the lives and livelihood of all Americans. And of equal importance, to set the record straight that there is not the general consensus of support for this provision as implied.

#### ALLEGATION

Extensive legislative hearings were held on the nondegradation proposal contained in S3219. To quote from the May 26 Congressional Record.

In 1975, 14 days of hearings were held . . . One entire day of hearings was focused completely on nondegradation in 1975, and the subject was discussed in numerous other hearings that year.

## FACT

Comprehensive legislative hearings were not held on the issue of nondegradation. No hearings were held on the language contained in section 6 of S3219. The nondeterioration amendment was drafted and revised during subcommittee and committee markups, and the final version bears little resemblance to any proposal on which testimony was received.

Going to the official four-volume documentation of the committee hearings record, contained in 1895 pages of recorded testimony and submissions for the record, it is accurate that the subcommittee did conduct 14 days of hearings on provisions of the Clean Air Act. However, only 1 day was "focused completely on nondegradation," and this "entire day," as cited in the May 26 Congressional Record lasted a total of only 3 hours—the subcommittee convened at 10 a.m. on April 23, 1975, and recessed at 1 p.m. Moreover, only four witnesses were heard—two in support of a national nondegradation policy, one with mixed views and one witness opposed. The witness list for this single session included:

Mr. Richard M. Lahn, Washington Representative of the Sierra Club, accompanied by Mr. Bruce Terris.

Mr. Cubia Clayton, Director, Air Quality Section, New Mexico Environmental Improvement Agency.

Mr. J. D. Geist, Executive Vice President, New Mexico Public Service Co.

Mr. C. Howard Hardesty, President, Eastern Hemisphere Petroleum Division, Continental Oil Co., representing the American Petroleum Institute.

So, contrary to 1 full day of exhaustive hearings, 3 hours were held with four witnesses.

I hardly think that is adequate for this body to make a decision on nondegradation policy on the basis of 3 hours of hearings and the testimony of four witnesses.

Other than this "1 entire day" of specific hearings on nondegradation, the subject was not discussed "in numerous other hearings," as cited in the May 26 Congressional Record. Again, going to the official committee record, no other witnesses devoted full testimony to the subject of nondegradation. Only six witnesses made any reference as part of their testimony on overall provisions of the present law and this sparked questioning only twice by the subcommittee. Following are the dates and appearances of witnesses:

March 19, 1975: Environmental Protection Agency—Administrator Russell Train briefly referenced nondegradation in the closing three paragraphs of his prepared statement; there was apparently no discussion throughout the 123 pages of the hearing transcript.

March 20, 1975: Federal Energy Administration—Administrator Frank Zarb included nondegradation in prepared testimony on the Administration position on Clean Air Act Amendments. The statement was not read and there was no discussion of nondegradation in the entire 417 page transcript.

April 21, 1975: National League of Cities—Mr. Walter Rockenstein commented that without a national nondegradation policy, industry would leave the cities and relocate in rural areas. When questioned that his statement "almost sounded selfish," the witness replied that in part he was misunderstood, but "Obviously we don't care to lose the industries which provide jobs for our people."

April 22, 1975: Iron and Steel Institute—Mr. David M. Anderson, Environmental Quality Control, Bethlehem Steel (who also serves on the Environmental Protection Agency Air Quality Criteria Advisory Committee) observed that the steel industry will require construction of approximately 30 million additional tons of steel capacity but it may be necessary to import this with resultant loss

of jobs for American workers as a result of overly stringent air quality standards. He advised that other major industries would face the same problem.

May 1, 1975: Pacific Power & Light Company—Mr. George D. Rives, Counsel, advised the Subcommittee that he would support elimination of the nondegradation requirement from Federal law.

May 1, 1975: American Steel Institute—Mr. Fred Tucker advised that no other nation has regulations or limits based on significant deterioration and if domestic steel needs are to be met, we will have to import foreign produced steel.

Mr. Tucker also advised that because of the steel industry problems of compliance in maintenance areas it may be necessary to construct a new "grass roots" complex in a Class II area where air quality is above standards. But the Committee proposal would not allow this. The Senate Public Works Committee staff summary of nondegradation states in the April 1 Congressional Record, "Class II, as defined by EPA regulations and the Senate proposal, typically permits the individual siting of a 1,000 megawatt coal-fired power plant and any one of the major industrial source categories with the exception of a major new grass roots steel complex—none of which are planned." In correspondence to the Committee, also referenced in the April 1 Congressional Record, EPA Assistant Administrator for Air and Waste Management, Roger Strelow, makes the same comment.

Despite the fact of what was said in the Record over a year ago about exhaustive hearings and 1 full day, the actual record of those committee hearings shows that this has hardly been discussed at all.

Yet here in the Senate of the United States we are considering passing it with such a little bit of testimony indicated and without any factual knowledge whatsoever of the implications of the nondegradation policy.

#### ALLEGATION

States have been adequately involved in developing these amendments:

Twenty States joined the Sierra Club or submitted independent suits requesting the courts to require a nondegradation policy.

Eight states testified in 1975 during the Clean Air hearings. All submitted comments on nondegradation. It was on the basis of the suggestions made in such meetings and statements from these witnesses that caused the Committee to make substantial changes in the legislative proposal regarding nondegradation.

The National Governors' Conference supports the committee bill and "opposes the Moss amendment."

#### FACT 20 STATES

Twenty States did join the Sierra Club in its suit for a national nondegradation policy. But why?

According to testimony of the Sierra Club in the nondegradation hearing April 23, Mr. Richard Lahn advised the subcommittee that a paramount reason 19 States joined the Sierra Club brief was to prevent industry from "fleeing" to rural areas.

To quote from Mr. Lahn:

Aside from the environmental aspects described, perhaps the most important reason for preventing significant deterioration of air quality in clean air regions is the possible impact the lack of this provision might have on the economic well-being of our already industrialized, urban centers.

Again, a little bit of selfishness, not going to the merits or the impact of it, just let us not lose our industry from the urban areas.

The incentives to develop in rural areas, draining the industrial development in urban areas was a major concern of the 19 States which filed friend of the court briefs before the Supreme Court.

The brief filed by 16 of the States makes the point well:

The health of the economies of urban-industrial regions is dependent upon industrial continuation and growth. It is in the best economic interest of these regions that sources remain in them and utilize the emission controls necessary to reduce pollution levels to the numerical limits of the standards.

Thus, it is beneficial to those regions that the requirement of no significant deterioration prevents rural regions from allowing lenient emission controls that are so much less expensive that an industry will have a financial incentive to relocate in a rural region.

The requirement of no significant deterioration removes the possibility of economic coercion between competing regions based on the stringency of emission control requirements.

#### FACT

In short, industrialized areas of the country were fearful that industry would migrate to rural areas and therefore supported the concept of nondegradation in order to hold industry hostage. This same concern was expressed by the National League of Cities in testimony April 21—the only comment made on nondegradation in that hearing.

This but represents another misconception of the highly complex issue of the nondegradation proposal and the present law itself. This phenomenon simply would not happen because of the “new source performance standards”—NSPS—required by the law. The present law carefully plans for the control of pollution that might result from industrial growth in new areas. Any new industry must meet the most stringent pollution reduction emissions possible to attain primary and secondary air quality standards. If they do not, they would not be granted permits:

Section 111 of the law requires the Administrator of EPA to establish performance standards applicable to new or modified stationary sources that may contribute significantly to air pollution. Such standards, known as “new source performance standards”—NSPS—require the “best system of emission reduction available” and are applicable even in those areas of the Nation where the ambient air quality is better than that required under the national primary and secondary standards.

Nine of the 19 States which originally joined the Sierra Club suit, have now expressed strong concern or opposition to enactment of a national nondegradation policy. Of the 19 States that joined the suit—Alabama, California, Connecticut, Florida, Illinois, Kansas, Louisiana, Maine, Massachusetts, Michigan, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, South Dakota, Vermont, and Texas—the nine States that have advised of their grave concerns with the impact of such policy are: Alabama, Florida, Kansas, Louisiana, Maine, Michigan, Ohio, North Carolina, and Texas. Their comments, together with those of other State Governors follow:

#### GOVERNORS COMMENTS ON PROPOSED NONDEGRADATION LEGISLATION

The Governor of Alabama, Hon. George C. Wallace:

... the way nondegradation is defined can have a significant effect on growth plans and employment in our State. I urge you to oppose any specific definition of nondegradation. (Proposals) will concentrate development more heavily in already impacted areas and completely shut off further development in the relatively underdeveloped areas. The several states are in a better position than Congress to define areas needing specific controls. (2/12/76)

**The Governor of Arizona, Hon. Raul H. Castro :**

Consequently, the economic development of this State could be unduly determined at the Federal level. It is essential that State rights are preserved and that opportunities to participate in the decision making process are provided to local governments particularly when standards to protect human health and welfare are not exceeded. I urge Congress to establish a study commission to investigate and analyze the implications and consequences of the non-deterioration provisions as promulgated and proposed and to consider the alternative approach outlined by my staff in the enclosed report. (2/19/76)

The Governor specifically supports the study as proposed in the Moss amendment.

**The Governor of Florida, Hon. Rubin O. D. Askew :**

One resource which is vital to Florida is the quality of air and the tourism which depends on it. Florida's air quality is for the most part better than secondary air quality standards. Florida has enacted a rule to prevent significant deterioration and the Florida Environmental Regulation Commission has resolved to continue the protection of areas with air quality better than the primary and secondary standards. I strongly urge you to carefully consider the consequences of adopting (nondegradation) and empowering the federal Environmental Protection Agency (EPA) to preempt the states' prerogatives in these areas. It is our position that the States are more capable of evaluating the economic and social implications of desired air quality within their boundaries than EPA. (2/11/76)

**The Governor of Georgia, Hon. George Busbee :**

I have previously taken a strong public position against the provisions . . . and I shall continue to speak out against them where possible. I have advised our Congressional delegation of our position with respect to proposed amendments to the Clean Air Act. (3/16/75)

**The Governor of Kansas, Hon. Robert F. Bennett :**

We share your concern that the proposal, as well as the existing federal involvement in the issue seriously erodes the state's authority to make the decisions necessary to strike a reasonable balance between environmental, economic, energy and social needs. (3/24/76)

**The Governor of Louisiana, Hon. Edwin Edwards :**

The Air Control Commission has requested that every effort be made to remove the offensive "Significant Deterioration" provisions from the bill since each state already has the right to choose small increments of deterioration in favor of economic and social gain for its populace and the proposed law effectively curtails that prerogative; Defeat of the entire bill may be in the best interest of the state if the offensive "Significant Deterioration" provisions cannot be satisfactorily resolved. (4/20/76)

**The Governor of Maine, Hon. James B. Longley :**

I share your concern over the possibility of further encroachment by the Federal government on the rights and destinies of Maine citizens and I concur with you that decisions affecting the local communities of Maine and other states should, whenever possible, be made at the local level. The State of Maine through our State Legislature and our Department of Environmental Protection has enacted some of the most sound and comprehensive environmental laws and regulations to be found anywhere in the entire nation. However, these laws and regulations are not so stringent as to preclude economic development. The people of Maine are justifiably proud of their State and its environment, but they are also very much concerned about the present economic picture in which there are not enough jobs for the people who want to work. (2/25/76)

**The Governor of Michigan, Hon. William G. Milliken :**

In letters to members of the Michigan Congressional delegation :

The amendments pending in Congress could lead to a federally mandated land-use program based on air quality. I have consistently maintained that land-use planning should be performed at the local level, and the legislation I have sup-

ported in Lansing (HB 4234) requires that planning be done at the local level. It is inappropriate to base a land-use program on air quality. The quality of the earth—not the quality of the air—is the only appropriate and sound basis for land use decisions. (4/29/76)

The Governor of Mississippi, Hon. Cliff Finch:

If pending amendments to the Clean Air Act are passed, it will virtually halt economic development in our state. I am a firm advocate of the stated objectives of the Clean Air Act; that is, that the State takes action to protect the health and welfare of its citizens through the adoption and enforcement of the National Ambient Primary and Secondary Standards. Court rulings and EPA regulations that go beyond the attainment of the National Ambient Primary and Secondary Standards should be overturned. The proponents seem to be anxious to get these provisions set in concrete in the law before the present court rules on this matter again.

The Governor of New Hampshire, Hon. Meldrim Thomson:

Resulting zero growth and adoption of a National Land Use law by this indirection would ruin the economy of small states such as New Hampshire as well as create an economic vacuum in enormous areas of the larger states. The punitive results of this amendment will fall upon our most needy citizens first and most heavily. Is there no end to these attempts by the Congress to hoist this country on its own petard?

The Governor of North Carolina, Hon. James E. Holshouser, Jr.:

North Carolina is well aware of the provisions of both the House and Senate versions of amendments, and we have actively opposed and intended to continue to oppose the enactment of either of these amendments in the Law.

The Governor of Ohio, Hon. James A. Rhodes:

The Governor has asked me to inform you that the Ohio Environmental Protection Agency has strongly opposed the nondegradation aspects of the U.S. Environmental Protection program. It is our opinion that such standards as are proposed by the subject amendment represent overreaching by EPA and would have a serious effect upon land use in our state. The Governor appreciates receiving your comments regarding this very important matter. (Thomas J. Moyer, Executive Assistant to the Governor)

The Governor of Oklahoma, Hon. David L. Boren:

Thank you for your letter concerning the Clean Air Act. I have already expressed my opposition to various Congressmen. I feel that environmental protection should be left at the state level, and I will continue to oppose federal regulations in this area.

The Governor of South Carolina, Hon. James B. Edwards:

We are asking the members of the South Carolina delegation in Washington to oppose the proposed amendments to the Clean Air Act of 1970.

The Governor of Tennessee, Hon. Ray Blanton:

The concern is that these amendments, if adopted, may infringe upon our state's authority and inhibit industrial expansion. I would appreciate your attention for your consideration and appropriate action you may be able to do to protect the rights of the State of Tennessee.

The Governor of Texas, Hon. Dolph Brisco:

I urge your support for any provisions that will accomplish the principles stated in the resolution adopted by the Interagency Council on Natural Resources and the Environment. The significant deterioration proposals would restrict growth in areas where the standards are not exceeded. In these clean areas where public health is not threatened such arbitrary limitations on growth simply are not acceptable to the majority of the citizens of Texas. Any decisions affecting growth must take into account the wishes of the people in the affected areas and must include a broad spectrum of considerations. Growth determinations must not be based solely on air quality as now perceived by the federal government.

The provisions of the amendments proposed by the Senate and the House infringe upon the right of the states and the citizens to determine growth rates and patterns according to local needs and goals. The proposed increments are arbitrary and far too restrictive. These increments will allow the Administrator of EPA to exercise undue control over land use throughout the country.

The Governor of Utah, my own State, the Honorable Calvin L. Rampton:

While there is much to be regretted in the bill from a technical and practical stand point, I find that the legislation is even more offensive administratively. The state is the ostensible administrator for the program, but in reality the states' role is purely ministerial. The air quality standards to be enforced are federally imposed, the land are to be included in each class are specified, and the limited discretion left to the state to redesignate can only occur after certain conditions are met. This bill is an example of good intentions run riot and what results from the lack of a coherent national energy policy. In the interest of environmental protection it imposes a no-growth policy on Utah without any regard for the long-term national interest.

The Governor of Virginia, Hon. Mills E. Godwin, Jr.:

If this legislation is enacted in its present form, Virginia would feel impelled to ask the courts to set it aside as unconstitutional. The National Governor's Conference adopted a resolution in September, 1975, which recommended that each State retain the flexibility to determine for itself what is "significant deterioration" consistent with local values. The Southern Governor's Conference also in September, 1975, expressed serious concern that "significant deterioration" provisions might arbitrarily prohibit economic development of many areas, even though the air quality would be much better than the level required for good health. The organization of State and Territorial Air Pollution Program Administrators also recommended, through resolution, that the Clean Air Act be amended to expressly provide that there shall be no requirement to establish air quality standards more stringent than the primary and secondary standards.

At the very least, the Committee should refer the nondeterioration provisions to a study commission for a thorough analysis of their implications, to be followed by public hearings where the full impact of any resulting recommendations may be focused on by State and local government representatives and concerned citizens.

I get a little bit offended when I look at the testimony that was put in the Congressional Record on May 26, which made these allegations, including an allegation that indicated that most of the Governors were in favor of this proposal, when I have just gone over the individual testimony of many, many Governors, and could relate many more Governors' statements of how they are opposed to it, and a National Governors Conference policy specifically opposed to these provisions.

Yet here we are again, 535 Members of the House of Representatives and the Senate, who continue to decide that we are brighter, that we are more intelligent, than the elected Governors of this country, the experts in air pollution control, and the local mayors and county commissioners.

Of course, it may be politically popular to be for clean air. I do not know of anyone who is not for clean air. But, despite all this testimony against it from those who must administer these programs in the States and those who must be responsible to their constituents, who have to raise taxes in their States, cities, and counties to provide for local governmental services, we back here, with only the responsibility to legislate and no responsibility to direct and administer these programs, are willing to go ahead with a nondeterioration policy without any regard whatsoever to the side effects or the economic impact on this country.

The American taxpayer and the American consumer will be the one who pays the bill for our mistakes. I think it is absolutely irresponsible that we continue to pass laws without basing our decisions on facts, and that is really all the Moss amendment is talking about. It is not even saying we should not have a nondeterioration policy; it is merely saying, "Let us not rush into a decision on the basis of emotion or politics when we do not have any idea of the economic impact on this country."

I believe that what we are doing is: We are passing a national no-growth land use policy without any idea of the impact it will have on the States and cities of this country, and ignoring the testimony of those Governors, mayors, and administrators who have to deal with the programs we pass.

In all fairness, we must point out that eight States did testify during the Clean Air Act hearings, but only one State, New Mexico, testified on nondegradation. None of the remaining States submitted any comment for the record, as indicated in the May 26 Congressional Record.

I hope that the Senate will look at the facts of what has happened, and not accept the statement that we have had extensive hearings and the comment that this has been studied to death. It has not been significantly studied at all. There are no factual bases on which to oppose or to be in favor of this particular section.

The seven States that did not testify were Nebraska, Texas, Colorado, New York, California, Montana, and West Virginia. They were concerned with other provisions of the act, and I have already read the testimony of several Governors from States that were included as testifying in favor, which did not testify at all.

It is, therefore, of question that "statements from these witnesses caused the committee to make substantial changes in the legislative proposals regarding nondegradation."

The facts simply do not relate to that.

The National Governors' Conference adopted a unified position on the issue of nondegradation at its conference in New Orleans in 1975 and there has been no indication that the basic position has changed since then.

Most of the statements I read from the Governors were in late 1975 and early 1976. So there really is no basis for the statements that this has been worked out very carefully and closely with the Governors of the country. I think the hearing record certainly bears that out.

As cited in policy positions 1975-76, National Governors' Conference:

The significant deterioration issue should be resolved by Congress in a manner which gives each State the flexibility to determine for itself what is meant by "significant," consistent with local values.

States are different around this country. None of my Senate colleagues from the Eastern States could comprehend the implication of having the Federal Government own two-thirds of his State. Two-thirds of the State of Utah is owned by the Federal Government. So, in effect, we certainly do have national land-use planning. It is in national forests, national parks, and in Bureau of Land Management land. We cannot turn around without asking BLM, EPA, OSHA, any of the Federal agencies what we can do. Two-thirds of the land value of the State of Utah is removed from the tax rolls. The Governor, local mayors, and county commissioners have to deal with that.

I wonder what would happen to the State of Pennsylvania if two-thirds of it were owned by the Federal Government and it was removed from the tax rolls of that State to provide taxation to support the municipal and State services that citizens need to live together in urban and rural areas and, furthermore, if at any time they decide to build any kind of a factory, an electrical generating plant, or whatever, they had to run through the bureaucracy.

I sometimes wish that two-thirds of the Eastern United States were owned by the Federal Government, because then their representatives would suddenly come to the realization of what it means to have to be a mayor or a Governor, and be dictated to by some GS at EPA or OSHA or at the other Federal agencies. They then might be a little more sympathetic to those Senators, as myself, who come from the public lands States.

Utah is in rather good shape compared to Nevada. Nevada is owned about 86 percent by the Federal Government. Other Western States have a similar situation, whereas in the East you may have 1 or 2 percent, maybe 5 percent, and it does not seriously impede the economic growth and development or the job producing private sector as it does in the West.

In a letter dated April 18, 1975, to the Senate Subcommittee on Environmental Pollution, Governor Salmon, chairman of the National Governors' Conference Committee on Natural Resources and Environmental Management conveyed this same position:

The issue of significant deterioration should be resolved by Congress in a manner which gives each State the flexibility to determine for itself what is meant by "significant," consistent with local values.

This was during implementation of the Clean Air Act—1975, hearings, part 2, page 1939.

Subsequent to that time, consensus of the 50 Governors has not been reached on legislative proposals. This was brought to the attention of the full Public Works Committee in January 1976 by Gov. Thomas P. Salmon, chairman, Committee on Natural Resources and Environmental Management, National Governors' Conference:

As Chairman of the Natural Resources and Environmental Management Committee of the National Governors' Conference I have followed this controversial issue closely. The Committee's Clean Air Task Force has attempted to reach a consensus on prevention of significant deterioration, but the varying policy positions of the 50 Governors has precluded formulation of a legislative amendment which would gain unqualified NGC support.

Our Clean Air Task Force has advised me that the prevention of significant deterioration provisions contained in Senate Print No. 6 are unacceptable. However, the Task Force has been unable to develop an alternative proposal that would be acceptable to the National Governors' Conference.

Here again they are saying that they have not come up with a consensus.

We have heard testimony from many Governors. They all disagree on different means, perhaps in different degrees, but nevertheless they disagree, and the Governors state that they have not been able to come up with an alternative proposal that would be acceptable to the National Governors' Conference.

Yet we are led to believe that Governors have all been consulted and they have helped formulate this provision of the law, section 6. It simply is not true.

I wish to make that clear over and over again so that this Senate is not misled that Governors of this country have worked on this proposal and are in favor of it.

The concern of the Governors for State determination was reiterated in the telegram of Governor Ray, chairman, quoted in the May 26 Record.

In their December 1975 conference in Austin, Tex., the 25 State and territorial air pollution program administrators—STAPPA—who are charged with implementing the provisions of the Clean Air Act in their respective States unanimously adopted the following resolution which opposes standards stricter than present law:

That Sec. 101(b) of the Clean Air Act should be amended to read as follows: "(1) to protect and enhance the quality of the Nation's air resources by establishing, achieving and maintaining national ambient air quality standards, standards of performance for new stationary sources and national emission standards for hazardous air pollutants so as promote the public health and welfare and the productive capacity of the Nation, but nothing in this Act is intended to require the establishment by the Administrator of air quality standards more stringent than primary and secondary ambient air quality standards; and that Section 110 should be amended by adding the following subsection (g) thereto: (g) Each state plan shall determine what degradation of air quality, if any, is to be permitted."

A unanimous resolution by those who have to administer the State and territorial air pollution program administrators, the experts who have to administer what we do, unanimously say "Don't do it."

We hear in the Chamber again and again that we should.

But I suggest we start listening to Governors and program administrators and not substitute our own judgment.

The State pollution control officials endorsing this resolution included the administrators from Arkansas, Connecticut, Delaware, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Maryland, Massachusetts, Michigan, Minnesota, Nebraska, New York, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Vermont, Virginia, West Virginia, Wisconsin, and Wyoming.

I hope we have laid the allegation to rest that the States are in favor of this proposal and helped put it together. They did not.

Another allegation in the May 26 legislative proposals submitted to the committee and considered by the committee included: The American Paper Institute, the American Mining Congress, Dupont, the National Association of Manufacturers, Shell Oil, Utah Power & Light, Cast Metals Federation, Chamber of Commerce, National Association of Counties, the Electric Utility Industry, Continental Oil Co., the Sierra Club, and the State of New Mexico. This was in addition to the President's proposal.

The fact of submissions is not the case in point but the extent to which the committee "considered" these proposals is questionable. As stated earlier, full accord was given by the subcommittee to the Sierra Club and the State of New Mexico, proponents of a nondegradation policy. But as previously stated, the President's proposal, which was to have been presented by FEA Administrator Frank Zarb, was in fact not discussed during his appearance before the committee. The fact is that the President's proposal was ignored in the hearing process. While it is printed in the committee record it was certainly not given the consideration normally accorded the presentation of any administration

witness on policy recommendations to the Congress that affect the entire Nation.

Moreover, the remaining legislative proposals received from industry were not treated during any hearing but merely appear as statements for the record, in large part contained in the appendix of the hearing report.

Without exception, all of these statements for the record express grave concerns with the job and economic implications of the committee proposal.

Again, the facts are quite different from what was stated in the Congressional Record on May 26.

#### ALLEGATION

No studies have been done. A further 1-year study is necessary to have adequate information upon which to base a decision.

#### FACT

No one has claimed that no studies have been done. Indeed, a minimum of 20 individual studies have been made in an attempt to analyze impact of the committee proposal on such vital issues as employment, coal development, oil imports, consumer costs, and economic growth. It should be noted that because these studies were put together on an individual piecemeal basis it is impossible to provide for a comprehensive overview of total impact. It should be further noted that these studies were developed in reaction to the committee amendment; and, therefore, any conclusions of potential adverse consequences were not part of the consideration in developing this nondegradation proposal. The very fact that so many studies were developed in reaction to the committee proposal, of itself, indicates the serious questions raised on the effect of this proposal on the Nation's economy.

Of the studies annotated in the May 26 Congressional Record, it should be noted that 21 of these were prepared, not in connection with the proposal before us, but prior to 1975 in relation to the EPA regulations. Since the Committee proposal, and its impacts, is far different from the existing regulation, it is questionable if this listing is relevant to the questions now being raised.

It certainly does not provide an overall, comprehensive viewpoint or answer the questions that the proposal in the Moss amendment—to have a complete study over a 1-year period, a comprehensive, complete study, analyzing all aspects of the problem—would provide Congress, so that we then could make a decision based on facts rather than political or emotional considerations.

I wish to call my colleagues' attention to the annotated bibliography "Studies on Nondeterioration of Air Quality," prepared by the Department of Commerce Regulatory Policy Committee in May 1976, which I am inserting in the Congressional Record.

This compilation lists 17 studies done to date on proposed nondegradation legislation and provides summaries of conclusions for each of the studies. I believe this will be very helpful to my colleagues to review—first, to point out the specific questions being raised on inhibiting effects of section 6 on diverse economic sectors of the country and second, in demonstrating the need for unified, comprehensive

study of this issue, as the Moss amendment would do. To quote from the Department of Commerce Summary to this compilation of studies:

These studies have contributed valuable insights on the technological and economic ramifications of nondeterioration proposals. In the process of doing so, they have shown the difficulties involved in developing an overall assessment. They point out the gaps in knowledge and point the way to completing the necessary industrial and regional analyses which would fill the gaps.

Geographically, these analyses attempted to cover the implications of nondeterioration for the following localities:

Colorado, Florida, Iowa, Maine, Minnesota, New Mexico, Texas-Louisiana, West Virginia, Wisconsin, Boston, Dallas-Forth Worth, Four Corners, "East," "Central," "West." Rural areas, Urban areas, Regions, general.

While the nondegradation proposal of section 6 in S. 3219 applies to 28 major sources, the analyses cover only 9 major industrial sources. This again demonstrates the gap in knowledge of the full effects of this proposal. Following is the listing of major sources coverage of studies:

#### MAJOR SOURCE COVERAGE OF STUDIES

##### LIST OF 28 MAJOR SOURCES IN S. 3219

Source studied, not studied:

1. Fossil-fuel fired steam electric plants, studied.
2. Coal cleaning plants, not studied.
3. Kraft pulp and paper mills, studied.
4. Portland Cement plants, studied.
5. Primary zinc smelters, studied.
6. Iron and steel plants, not studied.
7. Primary aluminum ore reduction plants, not studied.
8. Primary copper smelters, studied.
9. Municipal incinerators, not studied.
10. Hydrofluoric acid plants, not studied.
11. Sulfuric acid plants, not studied.
12. Nitric acid plants, not studied.
13. Petroleum refineries, studied.
14. Lime plants, not studied.
15. Phosphate rock processing plants, not studied.
16. Coke oven batteries, not studied.
17. Sulfur recovery plants, not studied.
18. Carbon black plants, not studied.
19. Primary lead smelters, studied.
20. Fuel conversion plants, studied.
21. Sintering plants, not studied.
22. Secondary metal production facilities, not studied.
23. Chemical process plants, not studied.
24. Fossil-fuel boilers, studied.
25. Petroleum storage and transfer facilities, not studied.
26. Taconite ore processing facilities not studied.
27. Glass fiber processing plants, not studied.
28. Charcoal production facilities, not studied.

##### MAJOR SOURCES NOT LISTED IN S. 3219

Coal mining, studied.  
Oil and gas extraction, studied.  
Industries, generally, studied.

Out of 28 major sources, the majority has not been studied. Yet, we continue to be told we are ready to pass this section 6. I am a little dumbfounded that we, as a Senate are willing even to consider this section at this time, with all these sources that have not been studied. Yet, we continue to hear testimony that it has been studied to death.

I think it is a shame that we are in our usual situation of having three or four Senators in the Chamber. As is usual, when the time comes to vote, they will not know what the facts are. They simply will say, "It has been studied to death. We have to have clean air. We have to have this and that." But they will ignore the facts. Hopefully, a few of them will look at the Record and will look at the facts. Perhaps we will have some basis to make a decision.

The analyses cite a number of factors which enter into considerations of the impact of proposed nondeterioration legislation such as industry factors of size and location of plants, energy source and use, availability of water and raw materials and plant design; and regional factors such as meteorological conditions, terrain, background emissions and availability of land. The assumptions, methodologies and analytical measures of impact vary widely but certain conclusions are common to many of the studies.

Class I areas, including "buffer zones," appear to be a major obstacle to economic growth for the industries analyzed;

Capital costs required to meet the nondeterioration requirements are higher than the Clean Air Act current requirements;

Nondeterioration requirements will necessitate the use of smaller size plants, the installation of additional control technology, the construction of taller stacks, and relocation of plants at alternative sites.

Future growth opportunities will be restricted without a class III designation or a variance from class II requirements.

To highlight some of the individual study conclusions on some of the industries that were studied:

**Oil refineries.**—Production costs would increase due to reduction in plant capacity, the necessity to use stringent control technology and locating plants at less advantageous sites. Dislocation of planned industrial plants to nonimpacted sites would cost \$640 million to \$1.8 billion in capital investment in 1975 dollars in order to meet 1985 demand growth. The regulations will affect energy independence. (Bonner & Moore study)

**Power plant capacity.**—In flat terrain, a 2000 megawatt powerplant could be built; but in hilly or mountainous terrain, only a small plant could operate in a class II area. For example, in New Mexico, the maximum size calculated allowable was 158 megawatts, an inefficient size for a new facility, and in very hilly terrain, such as West Virginia, 49 to 64 megawatts would be the maximum size allowable. (ERT study)

**Western coal mining.**—For air quality control regions (AQCR) where more than one surface mine is proposed, the proposed amendments would prohibit new surface mining operations in such AQCR's. (ERT study)

**State of Maine.**—Industrial development in Maine would be more severely restricted than in many other States. The presence of hilly or mountainous terrain and the potentially large number of class I areas would exclude industrial development in many parts of Maine. (ERT study)

**State of Florida.**—Significant deterioration proposals will add \$120 to \$300 million to costs of electricity supplied to Florida Light and Power Company customers. (Florida Power & Light Co. study)

**States of Minnesota and Wisconsin.**—Impact on both Minnesota and Wisconsin would be severe in terms of the siting of new power-plants and providing electricity for new industries in these States. (Hoffman & Bechtold study)

**Rural areas.**—Rural area development will be higher in cost due to added control requirements; not locating plants where they would otherwise have been located; plants would be built smaller than otherwise. (ICF study)

**Urban areas.**—Economic development and employment in urban areas violating NAAQS would not increase; this is attributable to current Clean Air Act. Nondeterioration provisions may result in siting new facilities further from urban centers than would otherwise occur. This would tend to contribute to further urban sprawl, a lengthening in job travel time adverse environmental effects and other socioeconomic effects. (ICF study)

Energy development.—Oil consumption would increase by 1 million barrels a day (MBD) of largely imported oil. Oil field development, such as tertiary recovery, could be inhibited. Natural events which degrade air quality, e.g., dust storms, could preclude development of energy and material resources such as oil shale, coal, and copper. (ICF study)

Consumer utility bills.—In the absence of nondeterioration, the Clean Air Act will cost each American household \$1,500 between 1975–1990. The nondegradation amendment to S. 3219 would add \$299 to \$673 per household. (NERA study)

If the American public, the taxpayer and the consumer, started to find out some of the facts on the few industries that were studied and learned what Congress was going to impose on them in the name of clean air, I wonder how many Members would be reelected if they were going to continue to impose these costs? Because the consumer will pay the bill for what we are doing, there is no doubt about that, and it will be a big bill:

Jobs.—The electric cost per household between different regions “indicates the extremely disparate regional effects of the legislation. To the extent these costs are passed on to industrial customers regionally, they are likely to discourage the expansion of electric-intensive industries in high-cost areas, and, as a consequence, adversely affect employment and economic growth in those regions.” (NERA Study)

Electric utility industry.—The electric utility industry will experience the major economic impact. The Senate proposal will increase the electric utility industry capital requirements by about \$11.5 billion over the next 15 years. (EPA Study)

Based on the projected growth rate of 7.5 percent in generating capacity, capital requirements for production equipment in the utility industry would range from \$107 billion to \$127 billion over the 1981–1990 period. Total production costs would range from \$170 to \$250 billion. (GE Study)

#### ALLEGATION

EPA's basis for requiring pollution cleanup has been challenged and ERPA staff has been charged with deliberately distorting data regarding the effects of pollution. These charges have effectively been laid to rest by the hearings held Friday, April 9, by the House Interstate and Foreign Commerce and the House Science and Technology Committee.

#### FACT

These charges have not been effectively laid to rest. There still remain many questions on the veracity of this study. The House Science and Technology Committee Subcommittee on Environment and the Atmosphere, chaired by Congressman George Brown of California, is now conducting a technical field investigation of the EPA CHESSE study because of the controversy and its relation to sulfate standards promulgated by EPA. The congressional hearing of April 9 served only to clarify the issues involved; the congressional investigation underway is intended to examine the methodologies employed by EPA in arriving at the results of the CHESSE study in order to resolve the present controversies as far as the Congress is concerned.

I wish to call my colleagues' attention to the May 4 Congressional Record (H3875–H3896) House consideration of H.R. 12704. EPA's authorization for research and development, during which considerable time was devoted to questions on the CHESSE study. Chairman Brown advised the membership of the committee's investigation into the methodology of the CHESSE study and submitted a memorandum outlining the committee investigation.

In summary, as the committee record indicates, the actual hearings on this issue were limited at best, certainly not extensive hearings. Yes, 14 days of hearings were held. Only 3 hours were held on nondegradation and four witnesses testified at that hearing. But more important than the actual, very limited testimony on nondegradation, the most critical amendment of the Clean Air Act is the limited scope of hearings that were held on the issue. The limited scope of the hearings did not address properly any of the major unknowns to national interest related to the economy, jobs, and energy resource development. They were conducted before the fact and not after the fact, treating the issue of nondegradation only in the broadest philosophical terms, without considering any of the pragmatic questions that must be resolved before formulating national policy, which could be detrimental to our national welfare.

There was no discussion in committee hearings on the technical questions arising from the final committee proposal; there was no discussion of the cost of compliance and if this cost could be met by industry; there was no discussion regarding the capability to meet the stringent emission increments under the class I and class II areas; there was no discussion of how States would address how to grant construction permits to industries competing for the same limited increment; most important, there was no discussion of what would be the full ramifications on the national economy in terms of capital cost requirements, job constraints, unemployment, and energy resource development. Surely this body should have the full and complete picture before making a final legislative decision for the country that will affect the lives and livelihood of virtually all Americans.

Further, we can ill afford having the American people subjected to a rational policy which, without proper study, could lead to lasting and possibly severe penalties.

I do not know exactly what the studies would show. I do feel very strongly that we do not have adequate information on which to base a decision, and that, with so many of the industries not studied and so many geographical areas of the country not included in any analysis, without any idea of the total impact on the economy, on jobs, and particularly, the cost that the American taxpayer will have to bear. I would suggest that we simply do not have adequate information on which to act. I feel that it is a very reasonable proposal in the Moss amendment, that we strike section 6, that we have a very detailed, comprehensive study for 1 year. At the end of that 1 year, we would be able then to come back and debate this issue on the basis of facts, not on the basis of emotion or on the basis of someone's opinion.

I also think there is another factor that we cannot ignore. That is the wishes of the American Governors, mayors, and county commissioners and of State legislators, who are almost universally opposed to this kind of assumption of States' rights, of taking away the individual rights of States to determine what nondegradation means in their State. Their wishes should be considered so that they will be able to balance economic development along with the goals of having clean air. I doubt very much that there is anyone in this body who disagrees with having clean air. We certainly do not want to deteriorate the quality greatly and impose that on future generations, but

we also do not want to impose joblessness, unemployment, and tremendous additional costs on the American taxpayer and the American consumer, either. So I think on the basis of facts, we should look at some balance.

#### ADDITIONAL STATEMENTS SUBMITTED

**Mr. HOLLINGS.** In recent months, I have become increasingly aware of a problem that may exist with the Clean Air Act. In essence, this act may not provide enough flexibility to allow for installation of new facilities in areas where it appears—often based on inadequate and questionable data—that the national ambient air quality standards are being exceeded. While the committee has attempted to address this problem through section 11 of the Clean Air Act Amendments of 1976, the relief offered may not go far enough, and I hope the conferees give further consideration to this issue.

Efforts to upgrade the quality of ambient air are of vital importance and command our unified support. Yet, recognition must also be given to the need for balance between clean air goals and economic growth. Population expansion, accompanied by increasing job demands, necessitates the maintenance of a vigorous employment market. The prospect of industrial stagnation poses problems of substantial magnitude. This is particularly so where that stagnation may result from well meaning but misguided attempts to solve ill-defined and poorly understood problems by the imposition of draconian measures.

Let me outline this problem as I see it. Section 110 of the Clean Air Act of 1970 requires each State to adopt a plan which provides for implementation, maintenance, and enforcement of the federally determined primary and secondary air quality standards. Subsection a(4) of that section requires that this plan provide for "adequate authority to prevent the construction or modification of any new source to which a standard of performance under section 111 will apply at any location which the state determines will prevent the attainment or maintenance within any air quality control region (or portion thereof) within such state of a national ambient air quality primary or secondary standard."

In essence then, a State which contains a region where a primary or secondary standard is being exceeded must prevent the construction of any new or expanded facility if it would emit any amount of the pollutant for which the standard is being exceeded. In theory this may be fine. In practice what has happened is that EPA has set standards which may be unattainable and which some feel are, at least in part, unjustified.

Furthermore, vast areas of the country are being classified as not meeting the standard based on inadequate and, in some cases, questionable data. In its wisdom, both the EPA and now this body, if it enacts this bill, have granted substantial delays in auto emission standards and in the application of transportation control plans. The result is that large areas of this country may be foreclosed from further development, even when that development is extraordinarily clean, based on dubious strategies to achieve questionable standards. My record of being responsive to environmental concerns is clear. I

am worried, however, that policies like this that prohibit growth with only questionable environmental benefit extract too great a penalty in foregoing job opportunities.

To give an idea of the national scope of this problem, the EPA on July 12 sent letters to 45 States requiring revision of their implementation plans because the existing plans are insufficient to achieve the national primary standard for one or more pollutants. It is conceivable that economic growth could be precluded in major portions of these 45 States. I ask to have printed in the Record the following table identifying the areas affected by this EPA mandate.

CALLS FOR SIP REVISIONS BY STATE AND POLLUTANT, JULY 1, 1976

	PM	SO <sub>2</sub>	CO	O <sub>3</sub>	NO <sub>2</sub>
Alabama	×				
Alaska					
Arizona			×	×	
Arkansas	×				
California	×		×		×
Colorado	×		×	×	×
Connecticut	×	×	×	×	
Delaware				×	
District of Columbia	×	×		×	
Florida					
Georgia			×	×	
Hawaii					
Idaho	×	×		×	
Illinois				×	
Indiana					
Iowa	×				
Kansas	×				
Kentucky		×	×	×	
Louisiana	×			×	
Maine	×		×	×	
Maryland	×		×	×	
Massachusetts	×	×	×	×	
Michigan				×	
Minnesota				×	
Mississippi					
Missouri	×	×			
Montana	×	×			
Nebraska	×				
Nevada			×	×	
New Hampshire	×			×	
New Jersey	×	×	×	×	
New Mexico	×	×	×	×	
New York	×	×	×	×	×
North Carolina			×	×	
North Dakota					
Ohio			×	×	
Oklahoma					
Oregon	×		×	×	
Pennsylvania		×		×	
Rhode Island	×	×	×	×	
South Carolina	×				
South Dakota	×				
Tennessee	×			×	
Texas	×				
Utah	×				
Vermont			×	×	
Virginia			×	×	
Washington				×	
West Virginia	×			×	
Wisconsin				×	
Wyoming	×				
American Samoa					
Guam					
Puerto Rico	×	×			
Virgin Islands					

Mr. HOLLINGS. Although we have implemented strict enforcement plans to control ambient air pollution, South Carolina is in violation of the national standard for oxidants. While EPA's strategy for control of oxidants relies entirely on control of hydrocarbons, a so-called

precursor for oxidant formation, our own State officials question the technical basis for this approach. My concern about this problem is that if we are unable to further control oxidant levels new industries may be banned from our area at a time when our economic development needs are substantial. Governor Edwards has addressed this problem in a letter to me asking that I consider more flexible provisions for industrial growth than those offered in the Clean Air Act Amendments of 1976.

I insert in the Record letters to me from the South Carolina Department of Health and Environmental Control via our State development board, and from Governor Edwards.

STATE DEVELOPMENT BOARD,  
Columbia, S.C., July 2, 1976.

Hon. ERNEST F. HOLLINGS,  
Member of the Senate,  
Senate Office Building,  
Washington, D.C.

DEAR SENATOR HOLLINGS: In response to your inquiry regarding air quality in South Carolina, I asked Mr. Bill Crosby, Chief of the Bureau of Air Quality Control of the South Carolina Department of Health and Environmental Control to discuss this question so that we could all be more informed.

I am enclosing Mr. Crosby's excellent analysis of the situation in South Carolina. I hope you will be able to use this information as you work with the Clean Air Act and subsequent amendments to it.

Sincerely,

ROBERT E. LEAK,  
Director.

[From the South Carolina Department of Health and Environmental Control,  
Office of Environmental Quality Control, Columbia, S.C.]

#### MEMORANDUM

To: Robert Leak, Director, S.S. State Development Board.  
From: W. G. Crosby, Chief, Bureau of Air Quality Control.  
Subject: Air Quality in South Carolina—Compliance Status.  
Date: June 25, 1976.

As we discussed over the phone, air quality in South Carolina is good and has met all of the national primary standards except that for oxidants. The circumstances surrounding this latter are quite complex, and I will attempt to give our experience shortly. Suspended particulate matter is the only other pollutant which gives us any problems, although we have attained the primary standards. We have two problem areas here, though, as well.

We operate two continuous oxidant monitoring stations in South Carolina, one at Rock Hill and the other at Columbia. Both show levels in excess of the national standard intermittently with meteorological conditions definitely playing a role. The disturbing part of it is that, although the maximum levels are never more than twice the national standards, the frequency of the periods during which the standards are contravened increases with every year.

This is not just a South Carolina problem. Reports from around the nation indicate that this is the usual case. For instance, in EPA's Region IV consisting of the eight southeastern states, forty one of forty eight sampling stations showed contraventions of the standards last year. New England, Midwestern, North Central, Southwest, it seems to make little difference; periods when the oxidant standards are not met abound.

The major component of the oxidant concentrations is ozone, held to result from the photochemical reaction between hydrocarbons, oxides of nitrogen and ultraviolet rays of sunlight. Through long and complex mechanisms the end result is mostly ozone and photochemical smog. Technically, the presence of hydrocarbons is not necessary for the production of ozone, but they do accelerate the reactions and, as a practical consideration, are usually involved.

It was originally thought that only "reactive" hydrocarbons were involved to any extent, these being organic vapors containing only hydrogen and carbon

which brought about rapid photochemical reactions. Lately it has been recognized that many hydrocarbons and other organic vapors can produce the same results, but take longer, thus allowing time for long-range transport to different parts of the country before being felt as ozone at distant locations. Also, terpenes, pinenes and other naturally occurring organic vapors can help produce the same end products, such as the haze which adds the blue to the Blue Ridge Mountains and the smoke to the Smokies. During stagnant high pressure systems, frequent visitors to the southeast, we have air from aloft descending to earth containing much of the ozone. This same condition prevents the upward movement of oxidants generated here, and these are the circumstances under which we exceed the standards.

I apologize for going into so much detail but felt I couldn't give a simple explanation. Even now we do not know how much of the responsibility lies with hydrocarbons and organic vapors from automobiles, from stationary sources or from natural sources. We have no good way to measure and identify organic materials on a practical basis in the field and are waiting for EPA to develop more information. We do expect the forthcoming tighter tail-pipe standards for motor vehicles to bring about a substantial reduction, however.

In the industrial part of Charleston and in the city of Georgetown we have just barely met the primary standards for total suspended particulates (TSP). This condition makes it unlikely that the standard will continue to be met unless there is a further tightening of emissions allowances in these areas, and does not offer much promise for growth. However, these areas are quite confined and neither Bushy Park nor other parts of the counties should be affected insofar as failure to maintain TSP standards is concerned.

There is substantial evidence indicating that a large part of the TSP problem in Charleston is due to vehicular re-suspension of dust from paved roadways and arteries. Just how this will be controlled we do not know, but I have misgivings about our ability to make major reductions by turning the screws in on industrial sources alone. We are studying the area intensively to try to come up with the best mix of further emission reductions with the smallest economic impact. We have a somewhat similar situation in the heart of Georgetown, although the issues are a little clearer there.

In the Greenville area TSP levels are in good shape, being well within standards. However, due to projected traffic growth alone, with the accompanying re-suspension of particulates from paved thoroughfares, dispersion modelling predicts a problem with maintaining standards ten years from now. We plan to take no further steps there for several years until we can verify or refute what the theoretical modelling predicts, since it is far from an exact science.

Secondary TSP standards are contravened from time to time in rural as well as urban areas due to dry weather and wind or plow action. This is not serious, however, and appears to be widespread in this as well as other parts of the country.

This is a rather lengthy rundown on the status of things in our state, but I hope it will be of some use. I shall be pleased to furnish additional information and discuss the ramifications as much as you wish, to the extent that I am able.

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OFFICE OF THE GOVERNOR,  
Columbia, S.C.

DEAR SENATOR HOLLINGS: Undoubtedly, the various states of the nation will be watching the Senate debate on S.B. 3219 (Amendments to the Clean Air Act of 1970) with a great deal of interest as well as a certain degree of trepidation. South Carolina is no exception. Please permit me to share some of the concerns our State Development Board and this office have about the Clean Air Act as well as the proposed Amendments.

While we applaud the basic intent of Congress, the courts and the Environmental Protection Agency to improve the ambient air quality of the nation as a means of benefiting the health and welfare of the citizenry, we are also alarmed that regulations may be drawn by E.P.A. which provide that air quality be the only determinant in allowing a new or expanded manufacturing plant project. As you are well aware, the economic development needs of South Carolina are still substantial. We would, therefore, hope that the State of South Carolina would have the right under the amended Clean Air Act to determine when an industrial development project would be clearly in the best interest of the State and its people.

It is with these concerns firmly in mind that we make the following recommendations for your consideration and whatever action you deem appropriate during the forthcoming debate:

1. The question of no-significant deterioration should be postponed until enough data to make a reasonable decision on the subject can be obtained. The cost/benefit ratio of this proposal is highly questionable from our perspective. We would, therefore, support the Moss Amendment which would postpone the adoption of the no-significant deterioration policy.

2. Regarding the Clean Air Act Amendments as recommended by the Senate Public Works Committee, we have real concerns about Section 11 of the proposed amendments. In subparagraph (C) (please see attachment), we believe it would be impossible under this regulation for a manufacturing plant to expand its facilities in non-attainment or maintenance areas of the state even though the existing facility was utilizing best available control technology. This would be unfair to both the company and the community as air quality would be the overriding consideration. Many of the newer industries in South Carolina already utilize best available control technology and, therefore, have nothing to trade off in their efforts to expand in the state. These companies would be at a disadvantage to those companies which have yet to install new pollution abatement facilities on their older plants.

3. Subparagraph (D) leaves much to conjecture and should be clarified as to intent. We would, therefore, recommend that it be clarified or deleted.

4. Insofar as we believe that the social, economic and environmental benefits from a particular project which utilizes best available control technology may far outweigh any air quality deterioration which might result, we feel that some mechanism be instituted to provide for this overall assessment. In South Carolina, this could be accomplished with an economic impact analysis of a specific project being provided by the State Development Board to the Department of Health and Environmental Control. Other states could institute similar procedures.

In this context, it would be beneficial if the amendment could carry an additional subparagraph (E) worded along the following lines:

"The foregoing regulations will apply in every instance unless in the judgment of responsible state and local government agencies the social, economic and environmental benefits of such proposed facility outweigh any air quality benefits to be derived by preventing such construction or modification, but in no instance shall less than best available control technology be permitted."

It would be extremely detrimental to the future of South Carolina, and indeed to all states, if air quality regulations were to be permitted to override the state's overall economic development needs. Please assist us in this matter.

Sincerely,

JAMES B. EDWARDS,  
*Governor.*

Mr. HOLLINGS. I would like to congratulate the committee on their recognition of this problem and their efforts to minimize the economic consequences implicit in the Clean Air Act. I am concerned, however, that the committee approach does not adequately address the problem. To illustrate the type of consideration that remains to be resolved, I shall talk about the oxidant standard and the problems surrounding it.

As Senators are well aware, oxidant levels exceed the national primary standard in vast areas of the country despite strict enforcement of control mechanisms. This phenomenon has caused increased controversy over the source of hydrocarbon emissions and the effectiveness of current control strategies. I quote from the sixth annual report of the Council on Environmental Quality, issued December 1975:

Until recently, ozone and other oxidants were generally considered an air pollution problem only for the large urban areas because they were produced by photochemical reactions of locally emitted reactive hydrocarbons and oxides of nitrogen and were abated through controls on auto emissions and transportation control programs. But, during the past few years, oxidant levels exceeding the 1-hour ambient standard were found in some rural areas, far from any cities or other known major sources of hydrocarbon or nitrogen oxide emissions.

While studying air pollution damage to Christmas trees in western Maryland and eastern West Virginia in the summer of 1970, EPA investigators unexpectedly found rural oxidant levels frequently exceeding the 1-hour standard. Additional studies carried out in Maryland, Pennsylvania, Ohio, and West Virginia showed that nearly all rural oxidants were ozone and that the problem was significant. In the four rural areas, the ambient ozone standard was violated in 15 percent (Area 4, West Virginia) to 37 percent (Area 1, Maryland) of all measurements made during the study. In fact, the standard was even exceeded by the average of all afternoon and evening ozone levels measured at the Maryland site in 1973.

These rural conditions are not unique. In California, the ambient standard for ozone was exceeded more often in Indio than at any other site in the State, and Indio is 140 miles from Los Angeles. High ozone concentrations have also been observed in several nonurban areas in California and in Florida, New York, and Wisconsin.

Considered with our knowledge of hydrocarbon emission control problems, the Council's observations offer a basis for reconsideration of the existing measures to reduce the oxidant concentration in our ambient air.

As I see it, four main technical issues surrounding the oxidant question need to be addressed before we lock ourselves into a strategy which may or may not be necessary to protect the public health but which definitely will preclude development in large areas of our country.

First, we must obtain adequate monitoring data. The CEQ states again in their sixth annual report:

Ambient oxidant data are also too sparse and too regionally oriented to permit a meaningful nationwide summary.

Wide areas of this country are not yet monitored for oxidant at all. In other cases, vast regions of a State are classified as not meeting the standard because perhaps one or two monitors, purposely placed in the most suspect areas, record violations of the standard. Even though these violations may be localized, further development of large areas may be precluded. I insert in the Record a compilation of monitoring data showing the number of stations reporting and the number of oxidant violations found in various regions throughout the country.

#### AIR QUALITY CONTROL REGIONS HAVING VIOLATIONS OF PRIMARY AIR QUALITY STANDARD FOR OXIDANTS

Regions in violation	Number of values exceeding 1-hr standard	Number of stations reporting
004—Metropolitan Birmingham.....	869	2
005—Mobile-Pensacola-Panama City-southern Mississippi.....	71	2
013—Clark Mohave.....	232	2
015—Phoenix-Tucson.....	156	2
018—Metropolitan Memphis.....	31	2
024—Metropolitan Los Angeles.....	23,236	37
025—North-central coast.....	77	4
028—Sacramento Valley.....	1,943	5
029—San Diego.....	667	6
030—San Francisco Bay area.....	2,370	22
031—San Joaquin Valley.....	3,857	6
032—South-central coast.....	47	2
033—Southeast desert.....	2,819	2
036—Metropolitan Denver.....	927	6
042—Hartford-New Haven-Springfield.....	785	6
043—New Jersey-New York-Connecticut.....	1,556	11
044—Northwestern Connecticut.....	135	1
045—Metropolitan Philadelphia.....	7,116	17
047—National Capital.....	781	11
056—Metropolitan Atlanta.....	7,021	2
060—Hawaii.....	8	1
067—Metropolitan Chicago.....	556	7

AIR QUALITY CONTROL REGIONS HAVING VIOLATIONS OF PRIMARY AIR QUALITY STANDARD FOR  
 OXIDANTS—Continued

Regions in violation	Number of values exceeding 1-hr standard	Number of stations reporting
069—Metropolitan Quad Cities.....	1	3
070—Metropolitan St. Louis.....	1,765	14
072—Kentucky.....	28	1
075—West-central Illinois.....	51	1
077—Evansville-Owensboro-Henderson.....	6	1
078—Louisville.....	11	2
079—Metropolitan Cincinnati.....	79	3
080—Metropolitan Indianapolis.....	396	6
085—Metropolitan Omaha-Council Bluffs.....	2	1
088—Northeast Iowa.....	11	3
092—South-central Iowa.....	2	2
094—Metropolitan Kansas City.....	13	5
097—Northwest Kansas.....	47	1
099—South-central Kansas.....	1,356	4
103—Huntington-Ashland, Portsmouth, Ironton.....	17	1
106—Southern Louisiana-southeast Texas.....	288	3
117—Berkshire.....	196	1
118—Central Massachusetts.....	421	2
119—Metropolitan Boston.....	477	5
120—Metropolitan Providence.....	505	2
121—Merrimack Valley-southern New Hampshire.....	138	1
123—Metropolitan Detroit-Port Huron.....	4	1
131—Minneapolis-St. Paul.....	16	3
148—Northwest Nevada.....	2	2
151—Northeast Pennsylvania—Upper Delaware Valley.....	1,930	5
152—Albuquerque mid Rio Grande.....	4	4
153—El Paso-Las Cruces-Alamogordo.....	296	4
158—Central New York.....	170	3
159—Champlain Valley.....	126	1
160—Genesee-Finger Lakes.....	82	1
161—Hudson Valley.....	323	3
162—Niagara Frontier.....	441	3
164—Southern Tier West.....	3	1
167—Metropolitan Charlotte.....	31	2
171—Western Mountain.....	54	1
173—Dayton.....	324	7
174—Greater Metropolitan Cleveland.....	24	2
176—Metropolitan Columbus.....	105	1
178—North west Pennsylvania—Youngstown.....	687	4
184—Central Oklahoma.....	373	2
193—Portland.....	145	2
195—Central Pennsylvania.....	282	1
196—South-central Pennsylvania.....	1,281	3
197—Southwest Pennsylvania.....	355	3
200—Columbia.....	52	1
207—Eastern Tennessee-southwestern Virginia.....	206	3
208—Middle Tennessee.....	530	4
212—Austin Waco.....	78	1
214—Corpus Christi-Victoria.....	200	2
215—Metropolitan Dallas-Fort Worth.....	294	3
216—Metropolitan Houston-Galveston.....	364	5
217—Metropolitan San Antonio.....	15	1
220—Wasatch Front.....	37	7
223—Hampton Roads.....	255	2
225—State capital.....	322	2
229—Puget Sound.....	54	11
239—Southeastern Wisconsin.....	781	6
240—Southern Wisconsin.....	67	2
010—South-central Alaska.....	0	1
065—Burlington-Keokuk.....	0	1
066—East-central Illinois.....	0	1
092—South-central Iowa.....	0	1
095—Northeastern Kansas.....	0	1
102—Bluegrass.....	0	3
115—Metropolitan Baltimore.....	0	5
143—Miles City.....	0	1
186—Northeastern Oklahoma.....	0	1

Source: Information obtained from EPA 1974 Monitoring and Air Quality Trends Report, published February 1976.

Mr. HOLLINGS. Second, we must thoroughly examine the standards themselves. It is probably not widely known what is meant when we say an area exceeds the oxidant standard. Do we mean the average air quality is worse than a certain level? No. In the case of oxidant, we mean that one monitor in one location exceeds the level established for

more than 1 hour in a year. In other words, further development in whole States, or in large portions of States, could be precluded by a recording in one location of an oxidant concentration greater than the standard for two 1-hour periods during an entire year. Is that really what we intended when we passed the Clean Air Act in 1970?

Third, we must better understand the contribution of nature itself to oxidant levels. R. A. Rasmussen of Washington State University, in a paper appearing in the July 1972 issue of the *Journal of the Air Pollution Control Association*, estimated that—

The annual contribution of forest hydrocarbon emissions to the air pollution problem on a global basis is reflected in the 175 million tons of reactive hydrocarbons from tree foliage sources compared to the 27 million tons from man's activities; in other words, there is a 6.2-fold greater emission level from natural sources than from man-made sources. The fate of these gaseous olefins in the atmosphere is undetermined.

Additionally, as pointed out in the letter I have already inserted in the Record from the South Carolina Air Board, it is theorized that some of the high oxidant readings we obtained may be a result of incursions of the stratospheric ozone layer—which we are also worried about—into the lower atmosphere. What sense does it make to preclude the development of clean, minimally emitting industry in wide areas of the country when nature itself may be responsible in whole or in part for ambient air concentrations which violate the standards established by EPA?

Finally, we must recognize that air pollution does not stay in one particular location. Particularly in the case of oxidant we are discovering more and more that long-range transport of pollutants is significant. In section 7 of this bill we have extended the time allowed before transportation control plans need to be adopted. Transportation control plans were initiated in part to control hydrocarbon emissions from mobile sources. These hydrocarbon emissions, as we have seen, are a precursor for oxidant formation. Charlotte, N.C., is an urban area where the oxidant standard is being exceeded. Parts of South Carolina are impacted by emissions from the Charlotte urban complex.

When we have given urban areas additional time to implement control plans and when these urban areas, via the long-range transport phenomena, may be responsible for exceeding the standard in far-removed areas, does it make any sense to prohibit industrial expansion in those rural areas as the net result of our actions on this legislation? I, for one, do not believe South Carolina development should be penalized because of our inability to control emissions from various urban complexes.

In conclusion, I hope I have brought into sharper focus an issue which I feel is of crucial importance. I do not feel this issue has been adequately addressed by the committee bill. I understand that the Bentsen and Domenici amendments deal with the oxidant question and the natural background for particulates. While these amendments are improvements, I remain concerned that the immediate problem of what course of action to follow in nonattainment areas remains unresolved.

EPA currently has in draft form a trade-offs strategy which they propose as a solution. I hope that in conference the conferees will

evaluate all these various proposals and with the flexibility available to them reach an adequate resolution of this issue.

I ask to have printed in the Record an article entitled "What Do the Hydrocarbons From Trees Contribute to Air Pollution?" published in the Journal of the Air Pollution Control Association.

#### WHAT DO THE HYDROCARBONS FROM TREES CONTRIBUTE TO AIR POLLUTION?

(By Reinhold A. Rasmussen, Washington State University, Pullman, Wash.)

(Figures do not appear in the Record)

Plant species release appreciable quantities of volatile organic substances to the atmosphere. The major compounds emitted are monoterpenes ( $C_{10}$ ) like  $\alpha$ -pinene,  $\beta$ -pinene, and limonene and the hemiterpene ( $C_5$ ) isoprene. The rate of emission of isoprene is light dependent and ranges between 0.04 to 2.4 ppb/cm<sup>2</sup>/min/1 for oak cottonwood, and eucalyptus foliage. The rate of emission of  $\alpha$ - and  $\beta$ -pinene and limonene is dependent on the rate of transpiration, structural integrity of the oil cells and resin glands, and temperature of the foliage. Rates of emission for conifer foliage range from 0.4 to 3.5 ppb/g/min/1. An inventory of North American forest regions for the frequency of occurrence of these chemicals released by different tree species showed that 15% was the lowest value for a specific forest-type that emitted terpenes to the atmosphere. More commonly 100% of the trees of a given forest-type emitted terpenes to the atmosphere. An average of 70% is typical of the United States forested regions as a whole. The annual contribution of forest hydrocarbon emission to the air pollution problem on a global basis is reflected in the  $175 \times 10^6$  tons of reactive hydrocarbons from tree foliage sources compared to the  $27 \times 10^6$  tons from man's activities; in other words, there is a 6.2-fold greater emission level from natural sources than from man made sources. The fate of these gaseous olefins in the atmosphere is undetermined.

The release of volatile substances through the aerial organs of plants is a well-known characteristic of the plant world. However, only the exchange of the metabolic gases of water, oxygen, carbon dioxide, and ethylene has been extensively studied; the nature of many other volatile emissions is as yet little studied. There are indications that a much more complex metabolic picture of gaseous exchanges with the atmosphere may exist. Ivanov and Yakobson<sup>1</sup> reviewed the Russian literature for volatile plant excretions from intact uncrushed tissues and reported that the leaves of a considerable number of plant species release into the atmosphere the following gaseous chemicals; hydrogen, a number of low-molecular weight hydrocarbons, several aldehydes, a wide variety of essential oil components, and acidic and basic compounds. Rasmussen and Went<sup>2</sup> reporting on gas-chromatographic data obtained *in situ* for the concentration of organic compounds in temperate forest and field atmospheres found that the concentrations of organic substances such as isoprene and pinenes in the air showed a diurnal variation and were related to the mass of the viable foliage.

#### BACKGROUND

Recently, Rasmussen<sup>3</sup> using mass spectrometry, infrared spectroscopy, and gaschromatography identified isoprene, in the gas phase, as an actively emitted foliar volatile from a wide variety of plant types. Previously, Sanadze and Dolidze<sup>4</sup> and Rasmussen<sup>5</sup> had observed several low molecular weight hydrocarbons as foliage volatiles, the major component tentatively identified as isoprene. It had been generally believed (Bonner<sup>6</sup>) that isoprene was not a natural plant product.

<sup>1</sup> V. P. Ivanov and G. A. Yakobson, "Exchange of metabolines in plants via aerial organs," *Fiziologiya Rastenii*, 12, (3): 405 (1965).

<sup>2</sup> R. A. Rasmussen and P. W. Went, "Volatile organic material of plant origin in the atmosphere," *Proc. Nat. Acad. Sci.*, 53: 215 (1965).

<sup>3</sup> R. A. Rasmussen, "Isoprene: Identified as a forest-type emission to the atmosphere," *Environ. Sci. Technol.*, 4: 667 (1970).

<sup>4</sup> G. A. Sanadze and G. M. Dolidze, " $C_5H_8$  (isoprene) type in volatile emissions from the leaves of plants," *Soobisch. Akad. Nauk Gruz. SSR* 747 (1961); *Chem. Abst.*, 57: 1222 (1962).

<sup>5</sup> R. A. Rasmussen, Ph.D. Thesis, Washington University, St. Louis, Mo. (1964).

<sup>6</sup> J. Bonner, *Plant Biochemistry*, Academic Press, Inc., New York, N.Y., 1950, p. 385.

Robinson and Robbins<sup>7</sup> reported on the source, abundance, and fate of gaseous atmospheric pollutants. Their calculations on a global scale of the inputs and outputs of the atmospheric trace gases showed that the major sources of  $\text{H}_2\text{S}$ ,  $\text{NH}_3$ ,  $\text{N}_2\text{O}$  and hydrocarbons were natural emissions possibly from plant foliage, while the sources of the trace gases  $\text{SO}_2$  and  $\text{CO}$  were determined to be derived mainly from pollutant sources related to mankind's activities.

The biological and atmospheric fate of foliar emissions such as these hydrocarbons and inorganic trace gases is poorly understood. In the laboratory Rasmussen *et al.*,<sup>8</sup> observed that the organic volatiles emanating from tropical foliages can be utilized by wild populations of fungi as the hydrocarbon source for growth. Furthermore, the data showed that the naturally occurring organic volatiles beneath the canopy of the tropical forest are produced as well as utilized by the microbial life growing epiphytically on the vegetation surfaces. The studies suggested that the volatile organic components of the atmosphere are absorbed in significant amounts by components in the soil. This disposition of atmospheric trace gases by absorption in soil must influence directly or indirectly the soil microflora and the root systems of plants. These studies suggested that naturally occurring organic volatiles are disposed of in a biological sink.

More recently, Inman *et al.*,<sup>9</sup> reported that soil was a natural sink for carbon monoxide. Hill<sup>10</sup> has proposed from his studies on the uptake of several gaseous air pollutants by vegetation canopies that vegetation could be an important sink for  $\text{HF}$ ,  $\text{SO}_2$ ,  $\text{Cl}_2$ ,  $\text{NO}_2$ ,  $\text{O}_3$  and to a lesser extent for peroxyacetyl nitrate during the growing season. Abeles, *et al.*,<sup>11</sup> reported that soil, through microbial or chemical means, can remove ethylene, other hydrocarbons,  $\text{SO}_2$ , and  $\text{NO}_2$  from the air. Gonzales and Hutton<sup>12</sup> have also reported similar observations that the microbial flora in tropical leaf litter are capable of selectively removing or metabolizing certain hydrocarbon types from diluted auto exhaust. Rasmussen and Hutton<sup>13</sup> in attempt to explain their biological observations in the tropics have proposed a hypothesis suggesting that the phyllosphere and rhizosphere component of certain plant communities offer large global sinks for the removal of naturally occurring organic volatiles.

An alternate approach to understanding the fate of naturally occurring organic volatiles is the parallel that exists between the fate of the olefins from automobile exhaust and the fate of isoprene and  $\alpha$ -pinene in the atmosphere. In the Haagen-Smit<sup>14</sup> photochemical mechanism for smog formation olefins, nitric oxides, and sunlight react to form ozone peroxyacetyl nitrate-like compounds, and aerosol material. Subsequently, Went<sup>15,16</sup> proposed a similar fate for the terpene emissions in the atmosphere. The aerosols (Aitken nuclei) produced as a result of this photochemical polymerization process are believed to be responsible for the natural atmospheric blue haze associated with vegetation.

Glasson and Tuesday<sup>17</sup> determined the reactivity of isoprene as one of a large number of hydrocarbons in the atmospheric photooxidation of nitric oxide. They determined the reactivity of isoprene as a rate of 3.7 ppb/min in the photooxidation of  $\text{NO}$ . This rate was intermediate between the high rate of

<sup>7</sup> E. Robinson and R. C. Robbins, "Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants," Report SRI Project PR-6755, Stanford Res. Inst. 1-122 (1968).

<sup>8</sup> R. A. Rasmussen, R. S. Hutton, and R. J. Garner, "Factors in establishing microbial populations on biologically inert surfaces," *Biodegradation of Materials*, A. H. Walters and J. J. Elphick, Ed. Elsevier, London, 1968, pp. 79-98.

<sup>9</sup> R. E. Inman, R. B. Ingersoll, and E. A. Levy, "Soil: a natural sink for carbon monoxide," *Science*, 172: 1229 (1971).

<sup>10</sup> A. C. Hill, "Vegetation: A Sink for Atmospheric Pollutants," Paper No. 71-66, presented at the 64th Annual Meeting of the Air Pollution Control Association, Atlantic City, N.J., June 27-July 2, 1971.

<sup>11</sup> P. B. Abeles, L. E. Craker, L. E. Forrence, and G. R. Leather, "Fate of air pollutants: Removal of ethylene, sulfur dioxide and nitrogen dioxide by soil," *Science*, 173: 914 (1971).

<sup>12</sup> A. Gonzales and R. S. Hutton, Disappearance of Naturally Occurring Organic Volatiles and Dilute Auto Exhaust in Temperature Cycled Chambers: Simulating Optimum Growth Conditions for Tropical Microbial Ecosystems," USATECOM Project No. 9-4-0013-02, unpublished progress report, Jan. 1969.

<sup>13</sup> R. A. Rasmussen and R. S. Hutton, Utilization of atmospheric organic volatiles as an energy source by microorganisms in the tropics," *Chemosphere*, Jan. 1972.

<sup>14</sup> A. J. Haagen-Smit, Chemistry and physiology of Los Angeles smog," *Ind. Eng. Chem.*, 44: 1342 (1952).

<sup>15</sup> F. W. Went, Blue hazes in the atmosphere," *Nature*, 187: 641 (1960).

<sup>16</sup> F. W. Went, On the nature of Aitken consideration nuclei," *Tellus*, XVIII: 549 (1966).

<sup>17</sup> W. Glasson and C. Tuesday, "Hydrocarbon reactivities in the atmospheric photo-oxidation of nitric oxide," Research Publication-General Motors Corporation, GMR-584, 1-32 (1966).

11.2 ppb/min for trans-2-butene and the moderate rate of 1.7 ppb/min for ethylene.

There is very little published detail on the atmospheric photochemical reactions of a terpene-nitric oxide system. Stephens and Scott<sup>18</sup> were the first to include two terpenes (pinene and  $\alpha$ -phellandrene) with their study of the relative reactivity of various hydrocarbons in polluted atmospheres. Both terpenes showed the high reactivity predicted by their olefine structures. Rasmussen<sup>6</sup> generated Aitken nuclei from several terpene compounds and foliage emissions at terpene concentrations of 100 ppm and low concentrations of nitric acid vapor (difference of 50 ppm). The data suggested fragmentation, dimerization, and polymerization via a free radical mechanism. Repperton *et al.*,<sup>19</sup> have reported an excess rates phenomenon for the gas phase ozone-pinene reaction. Most recently Stephens and Price<sup>20</sup> have reported that the infrared spectra of organic aerosols from  $\alpha$ - and  $\beta$ -pinenes showed prominent CH and carbonyl bands, whereas the spectra of smog aerosol are similar to those of sulfuric acid aerosol. Phillips and Wyatt<sup>21</sup> report that they have been able to distinguish between gasoline derived aerosols and aerosols from pine cone volatile emissions, on the basis of the index of refraction of the respective particles. These data are most interesting and suggest new ways of studying the natural blue haze aerosols over forested areas.

#### PRESENT STUDY

The research reported in this paper is concerned with the source and quantity of two terpene hydrocarbons, isoprene and  $\alpha$ -pinene, which are emitted from intact, uncrushed plant foliage under natural conditions. The aspects reported are: (1) An inventory of dominant forest tree-types related to the chemical compounds emitted. (2) The emission rate of selected plants species. (3) A calculation of the potential contributions that the foliat emissions of isoprene and  $\alpha$ -pinene may make to the hydrocarbon load of global and the U.S. continental air masses.

#### STUDY OF FOLIAGE EMISSIONS

##### Apparatus

The gas chromatographic equipment used in the study was a Hewlett-Packard Model 5751-B and a Perkin Elmer Model F11 with flame ionization detectors. All columns were constructed of 0.125 in. O.D., 0.105 in. I.D., 304 stainless steel tubing. For a readout a 1 mv potentiometric recorder was used with chart speed of 30 in./hr.

Column A was 6 ft in length, packed with 4% Carbowax 20 M on HMDS treated chromosorb W, acid wash, 60 to 80 mesh. This column was used to measure the monoterpene ( $C_{10}$ ) emissions. Isoprene was resolved on this column in the air-peak injection disturbance area. Column temperature was maintained at 60°C, injector temperature was 170°C, detector temperature was 250°C. Helium flow rate was 45 ml/min. Sample sizes varied between 1 and 5 ml. All samples were pre-pressurized to inlet pressure before injection using Pressure-Lok® gas syringes manufactured by Precision Sampling Corporation.

Column B was 7 ft in length and packed with Porapak Q, 100 to 120 mesh, and was used to quantitate the rate of isoprene emission. Column temperature was 150°C, injector temperature was 180°C and detector temperature was 250°C. Helium flow rate was 35 ml/min. Sample sizes varied between 1 and 5 ml.

##### Materials

The foliages studied were on intact plants in leaf assimilation chambers (volume 1 liter). The light intensities were 50, 340, 700, and 1200 ft cd. Tem-

<sup>18</sup> E. R. Stephens and W. E. Scott, "Relative reactivity of various hydrocarbons in polluted atmospheres," *Proc. API* 42 III: 665 (1962).

<sup>19</sup> L. A. Repperton, O. White, and H. E. Jeffries, "Gas Phase Ozone-pinene Reactions," *Div. of Water, Air, and Waste Chemistry, 147th National Meeting American Chemical Society, Chicago, Ill.*, pp. 54-56, Sept. 1967.

<sup>20</sup> E. R. Stephens and M. A. Price, "Smog aerosol: Infrared spectra," *Science*, 168: 1584 (1970).

<sup>21</sup> D. T. Phillips and P. J. Wyatt, "Optical Studies of Automotive and Natural Hazes: Scattering from Single Particles," Final Report EPA-APCO Contract CPA 70-171, and Coordinating Research Council CRC-APRAC Project APA-6-68.

peratures were 17, 28, and 30–32°C. The light quality was a mixture of Gro-Lux® and cool white fluorescent tubes and incandescent bulbs. The relative humidity was stabilized at 92% + RH in the closed chamber within 10 min. Broad-leaved foliages of 300 to 500 cm<sup>2</sup> total area (both upper and lower surfaces) were kept in the chambers for varying lengths of time, however, usually most experiments were run for one hour. Conifer (needle) foliages of 3–5 g were studied by the same method.

The folia released volatile organics (isoprene and  $\alpha$ -pinene) were monitored using 1-ml gas samples injected into the gas chromatograph and the concentrations determined by peak height measurements. Analyzed gas mixtures of 8.3 ppm isoprene and 6.1 ppm  $\alpha$ -inene by volume in nitrogen were used as reference concentrations (Scott Research Laboratories, Inc.).

TABLE I.—*Emissions of major eastern forest trees*

Softwoods:

*Emit  $\alpha$  pinene:*

White pine, Red pine, Jack pine, Longleaf pine, Slash pine, Shortleaf pine, Loblolly pine, Hemlock, White cedar, Larch, Spruce, Fir, Balsam fir, and Cypress.

*Emit isoprene:*

Oak, Sweetgum, Sycamore, Willow, Cottonwood, Balsam poplar, and Aspen.

Hardwoods:

*Emit isoprene and  $\alpha$  pinene:*

Sweetgum, Yellow poplar, Balsam poplar, and Spruce (softwood).

*Type of emission unidentified:*

Hickory, Blackgum, Beech, Birch, Maple, Ash, Black walnut, and Hackberry.

### *Results and Discussion*

*Isoprene and  $\alpha$ -Pinene Emissions from Forest-Types.* The prime source of the terpenes emitted from trees is believed to be the foliage. The emissions occur in conjunction with the plant's normal photosynthetic and respiratory exchange of atmospheric gases. However, oleoresin blisters and freshly exuded bud resins also contribute significant amounts of these monoterpenes to the surrounding air as do leaf, bark, and wood tissues undergoing cellular lysis and decay.

The types of terpenes emitted naturally from undamaged foliage identified to date are terpene hydrocarbons. The data suggest that 5 to 6 monoterpenes,  $\alpha$ -pinene, camphene,  $\beta$ -pinene, limonene, myrcene and  $\beta$ -phellandrene, are characteristic chemical components of conifer (softwood trees) terpenic emissions. The dominance of these monoterpene types in the foliar emissions parallels the high percentages of the same monoterpene types in the extracted oils from the sapwood, bark, and leaves.

In Figure 1, representative gas chromatograms of the volatile monoterpenes from several types of aromatic foliage are given. All of the analyses were made on uncrushed foliage, enclosed in leaf assimilation chambers. The total concentrations range from 1–4 ppm in 2-ml air samples. From eucalyptus and spruce trees the hemiterpene isoprene is emitted in addition to the monoterpenes.

The composition of the foliar emitted terpenes is very reproducible for the individual species specimen under study and in many instances is characteristic of the species in general. Therefore, the distribution of recurring terpene types can be used to finger-print and distinguish emission sources: pine from spruce, mixed pine-sagebrush from fir or hemlock, juniper from pine, fir-hemlock from redwood, and eucalyptus from redwood groves.

Coniferous foliages are not the only forest tree types that emit terpenoid materials freely into the atmosphere. The mature broadleaved (hardwood tree types) foliages of aspen, black locust, cottonwood, willow, oak, sweetgum, sycamore, yellowwood, paper mulberry, buckthorn, and Oregon grape emit isoprene (Rasmussen) and ethylene at concentrations directly measurable by a flame ionization detector.

In the calculation of the percent contribution different forest types may make to the hydrocarbon burden of the atmosphere, some facts on tree type distribution

are necessary. Hardwood forest types occupy approximately 53 percent of the nation's commercial forest lands, and softwood types, 47 percent. However, distribution of types differs sharply between the eastern and western U.S. (Figure 2).

In the west softwood types represent 93% of the forest acreage. Whereas, in the east they represent only 30 percent. Most of this western softwood forest is on the Pacific coast where Douglas fir and ponderosa pine predominate, (52 percent). Hardwood forests, on the other hand, are concentrated almost exclusively in the east. Here they exceed the area of softwood types by 2 to 1 (60 to 30 percent). The hardwood forests are largely (45 percent) oak-hickory type while the southern pine (loblolly-shortleaf pine) predominates in the eastern softwood forest acreage (50 percent) (Figure 2).

In the softwood (conifer) group all of the 31 major tree types in the eastern and western forests emit several monoterpene hydrocarbons from their foliage under natural conditions. The most common terpene measured is  $\alpha$ -pinene, usually comprising 20-98 percent of the gaseous terpenoid foliar emission. However,  $\beta$ -pinene together with  $\alpha$ -pinene were the most frequent and usually the largest peaks resolved in the analysis of the thirty-one conifer foliages studied (Table I and II).<sup>22</sup> The hardwoods are not noted for essential oils, therefore (no  $\alpha$ -pinene emissions) the picture of their foliar emissions is more complex. However, isoprene has been identified to be emitted by oak, sycamore, sweetgum, willow, cottonwood, and aspen trees. Of the 20 major hardwood forests trees representing the eastern and western forest-types group, 40 percent emit isoprene to the atmosphere.  $\alpha$ -Pinene, as well as isoprene, is emitted by the balsam poplar, the yellow poplar, and the sweetgum foliage, 15 percent of the forest group. The remaining 45 percent of the hardwood trees emit no terpene hydrocarbons: the volatiles emitted are unknown chemically (Tables I and II).

Six out of 19 of the forest types, in the eastern and western forest groups, are comprised of 51 tree species. These species occupy more than 50 percent of the commercial forest area in the U.S. As mentioned previously the softwood and hardwood types are about equal in area: 47 to 53 percent. However, as a result of the fixed distribution of forest types due to climatic conditions and the inroads of 300 years of forest harvesting, the western softwood area is slightly larger than the east's: 125 to 115 million acres (M.A.). Nevertheless, the eastern hardwood area exceeds the western softwood area by 2:1, 258 to 125 M.A. Therefore, the contribution by non  $\alpha$ -pinene hardwood forests in the east is of importance because isoprene is emitted by the dominant hardwood tree types (Table III).

TABLE II.—*Emissions of major western forest trees*

Softwoods:

*Emit  $\alpha$  pinene:*

Ponderosa pine, Jeffrey pine, Sugar pine, Limber pine, Western white pine, Lodge pole pine, Grand fir, White fir, Alpine fir, Western hemlock, Western red cedar, Douglas fir, Redwood, Larch, Sitka spruce—also isoprene, Englemann spruce—also isoprene, and Colorado blue spruce—also Isoprene.

Hardwoods:

*Emit isoprene:*

Aspen, Buckthorn. Type of emission unidentified: Tanoak, and Red alder.

<sup>22</sup> "Timber Trends in the United States." Forest Service, U.S. Department of Agriculture, Forest Resource Report No. 17 (Feb., 1965).

TABLE III.—COMPOSITION OF U.S. FOREST-TYPE GROUPS BY FOLIAR TERPENE EMISSIONS

	Percent total U.S. forest area	Percent $\alpha$ pinene emitters	Percent isoprene emitters	Remarks
<b>Eastern type group:</b>				
Softwood types:				
Loblolly-shortleaf pine.....	11.0	~100	-----	Some from oak and sweetgum associates.
Longleaf-slash pine.....	5.0	~100	-----	Do.
Spruce-fir.....	4.0	~75	25	From spruce, which also emits $\alpha$ pinene.
White-red-jack pine.....	20.	~90	10	From aspen trees.
Subtotal.....	22.0	~91	~9	
Hardwood types:				
Oak-hickory.....	23.0	<sup>1</sup> ~10	70	Diluted by hickory maple, and black walnut.
Oak-gum-cypress.....	7.0	~50	50	From plurality of oak, cottonwood and willow.
Oak-pine.....	5.0	~30	60	Diluted by black gum and hickory associates.
Maple-beech-birch.....	6.0	~15	-----	Terpene foliages are hemlock and pine.
Aspen-birch.....	5.0	~20	60	Diluted by birch, $\alpha$ pinene source balsam fir and balsam poplar.
Elm-ash-cottonwood.....	4.0	-----	30	From cottonwood, sycamore, willow.
Subtotal.....	50.0	~21	~45	
Total.....	72.0	-----	-----	
<b>Western type groups:</b>				
Softwoods:				
Douglas fir.....	7.0	~100	-----	
Ponderosa pine.....	7.0	~100	5	From aspen associates.
Lodgepole pine.....	3.0	~90	10	From Engelmann spruce and aspen.
Fir-spruce.....	3.0	~100	40	From spruce trees.
Hemlock-Sitka spruce.....	2.0	~100	25	From Sitka spruce.
White pine.....	1.0	~100	5	From Englemann spruce.
Larch.....	1.0	~100	-----	
Redwood.....	.5	~100	-----	
Subtotal.....	24.0	~98	~12	
Hardwoods.....	2.0	-----	~100	From aspen trees.
Total.....	26.0	-----	-----	

<sup>1</sup> Pine.

Examined by tree species (Figure 2), the most extensive timber in the U.S. is oak-hickory (116 M.A.). The loblolly-shortleaf pine type ranks second nationally (58 M.A.); followed by oak-gum-cypress (38 M.A.), Douglas-fir (37 M.A.), ponderosa pine (36 M.A.) and the maple-beech-birch type (33 M.A.). The stocking of forest land is complex even when simplified by describing the regions by tree-type and area. In addition to area and tree species it is important in understanding the potential emissions from forest lands, to know the stand density, age of tree (virgin forest, vs. 1st, 2nd, or 3rd cut over) and the growth capability or productivity of the forest type.

*Rates of Emission.* The rate at which gaseous terpenoid chemicals are emitted from undamaged plant foliage varies with the plant species, maturity of the foliage, integrity of the oil glands or resin ducts, and the leaf temperature. The emission of the hemiterpene isoprene is dependent on the additional variable of light. No isoprene is emitted from foliages in the dark. Monoterpenes, like  $\alpha$ - and  $\beta$ -pinene, are emitted from foliages in the dark.

The rate of  $\alpha$ -pinene emission was measured for white pine, ponderosa pine, loblolly pine, and white fir. The rates of emission (Table IV) at a given tempera-

ture were observed to vary between 0.2 and 3.5 ppb/min/g/l of fresh tissue depending on the temperature. At 17°C very low emission rates were measured. These rates are probably the result of the following two factors: first, the low temperature has the physiological effect of maintaining transpiration and metabolism at a low rate. Second, the boiling point of  $\alpha$ -pinene is 156°C so that a temperature of 17°C does not induce a sufficiently active vapor pressure for the distillation of  $\alpha$ -pinene from the foliar oleoresins. At 30–32°C the foliage was actively transpiring. The loss of water from the leaf tissue through the stomates must significantly influence the distillation of  $\alpha$ -pinene from the foliages through its entrainment in the water drawn from the substomatal chambers and the associated resin ducts. Therefore, the emission of a few ppb or less of a  $\alpha$ -pinene in the transpirational stream is possibly the major route of terpene emission from undamaged plant foliage. Care was taken to exclude  $\alpha$ -pinene from the evaporation of oleoresin blisters on the branchlets supporting the foliage.

TABLE IV.—RATE OF FOLIAR  $\alpha$ -PINENE ACCUMULATION IN A CLOSED ATMOSPHERE<sup>1</sup>

Plant	Units	Temperature °C	
		17	30 to 32
White pine.....	Ppb/min/gm....	<sup>2</sup> 0.4	2.0
Ponderosa pine.....	do.....	.3	1.2
Loblolly pine.....	do.....	.5	3.5
White fir.....	do.....	.2	1.5

<sup>1</sup> Conditions: Bell jar, 1 liter, light, 1,200 ft-cd.

<sup>2</sup> Values are means of 7 replicated measurements on same plants.

The rate of isoprene emission from the broad-leaved tree species was measured to range from 0.04 to 2.4 ppb/min/cm<sup>2</sup>/l. Table V shows the dependence of isoprene emission on light intensity for oak, sweetgum, eucalyptus, and cottonwood leaves.

*Contribution of Forest-Type Emissions to Earth's Air Mass.* Estimating the amount of foliage for different forest tree types in order to calculate the total amount of terpene ( $\alpha$ -pinene and isoprene) emitted to the global atmosphere is an immense task. Nevertheless estimates using regression equations have been made of the total amount of foliage on an acre by Kittredge,<sup>23</sup> Blow,<sup>24</sup> and Cable.<sup>25</sup> However, the complexity of the task for assigning the correct quantity of terpene emitted by each tree type within a given forest-type necessary to calculate the subtotal of the forest-type for use in calculating the total terpene emission is too large to be presented in this paper. Rather the rate of 100 ppb/hr (1.6 ppb/minute) measured for a mix of oak-pine foliages in a one liter flask, *in situ* under field conditions is in agreement with the studies made in growth chambers and will be used to estimate the impact of forest terpene emissions to the atmosphere.

Table VI shows the rationale of the system used to estimate the contribution to the atmosphere of foliage volatiles accumulated in a closed vessel. The sample calculation includes, besides the actual 10-cm foliage canopy depth used in the measurements, a 50, 75, and 200-cm canopy depth for enlarging the vertical foliage cover over the vegetated basal area. Thus the  $23.4 \times 10^6$  metric tons/year for the earth's vegetated surface with a foliar depth of 10 cm is increased to  $117 \times 10^6$  for a 50-cm canopy,  $175 \times 10^6$  for a 75-cm canopy, and  $464 \times 10^6$  for a 2.0-meter foliage depth.

Annual terpene emission estimates are also compared in Table VI for: (1) the earth's vegetated surface, (2) the total U.S. area, and (3) the commercial U.S. forest land. The emission estimate for the earth's vegetated surface is  $23.4 \times 10^6$  metric tons for a minimal vegetation foliage coverage of 10 cm.

<sup>23</sup> J. Kittredge, "Estimation of the amount of foliage of trees and stands," J. Forestry, 42:905 (1944).

<sup>24</sup> F. E. Blow, "Quantity and hydrologic characteristics of litter under upland oak forests in eastern Tennessee," J. Forestry, 53:190 (1955).

<sup>25</sup> D. R. Cable, "Estimating surface area of ponderosa pine foliage in central Arizona."

TABLE V.—RATE OF FOLIAR ISOPRENE ACCUMULATION IN A CLOSED ATMOSPHERE<sup>a</sup>  
[ppb/min/in<sup>2</sup>]

Plant	Light intensity (ft. cd.)			
	50	340	700	1200
Oak.....	b 0.04	0.40	1.7	2.4
Sweet-Gum.....	.02	.21	.70	1.4
Eucalyptus.....		.26	.83	
Cottonwood.....		.31	1.2	

<sup>a</sup> Conditions: Bell Jar, 7 liter; temperature, 28°C.<sup>b</sup> Values are means of 6 replicated measurements on same plants.TABLE VI.—ESTIMATION OF TOTAL CONTRIBUTION TO ATMOSPHERE FROM RATE OF FOLIAR TERPENE ACCUMULATION IN A CLOSED ATMOSPHERE<sup>1</sup>

Region	Area cm <sup>2</sup>	Metric tons (10 <sup>6</sup> ) per canopy depth in cm			
		10	50	75	200
Vegetated earth surface.....	10 <sup>18</sup>	23.4	117.0	175.0	464.0
Total U.S. area.....	10 <sup>17</sup>	23.4	11.7	17.5	46.4
Commercial U.S. forests.....	2×10 <sup>16</sup>	.47	2.4	3.5	9.4

<sup>1</sup> Conditions: Rate: 100 ppb/hour; daily output 10 hr/day; annual output 180 days/yr; volume enclosed, 1 liter; land area enclosed, 10 cm<sup>2</sup> Calculation: Rate (% vol)×wt of 1 liter at (convert to wt %)/daily output (hr)×annual output (days)×veg. surface of region (cm<sup>2</sup>)/area enclosed (cm<sup>2</sup>): 100×10<sup>-2</sup>×1.3 gm/1×10 hr×180 days×10<sup>18</sup> cm<sup>2</sup>/10 cm<sup>2</sup>; 23.4×10<sup>1</sup> metric tons/yr for earth's vegetation at depth of 10 cm.

The estimate for the total U.S. land area is an order of magnitude less. The emission estimate for the commercial U.S. forest land is 20% of the total U.S. area. The emission estimates at the 10-cm, canopy depth compare favorably with Robinson and Robbins' report for world-wide hydrocarbon output of reactive pollutants. Robinson and Robbins' world-wide reactive pollutant emission value of 27×10<sup>6</sup> tons lies about one-third of the way between 17.5×10<sup>6</sup> and 46.4×10<sup>6</sup> tons terpene emission estimates for the total U.S. area at the 75 and 200 cm canopy depths, which is equivalent to the emissions from the forested area of the U.S. at a canopy depth of 120 cm.

Previously, Went<sup>20</sup> Rasmussen and Went, and Ripperton et al.,<sup>27</sup> reported estimates of world-wide emissions of terpene-like compounds. Their values are summarized in Table VII. There are several interesting points in these data. (1) The wide range of estimates, from 13.5 to 432×10<sup>6</sup> tons; (2) Went's original estimate of 175×10<sup>6</sup> tons is the median value, and is the same as that for a canopy depth of 75 cm; and (3) Ripperton's et al., suggestion for increasing the 432×10<sup>6</sup> tons estimate by 2- to 10-fold. Ripperton, et al., concluded there was a need for this increase in the annual world-wide terpene emission estimate by assuming that terpene-like materials ( $\alpha$ -pinene as the representative type) are the major natural atmospheric organic gases that consume ozone in the troposphere and thus keep the ozone contribution from the stratosphere in balance.

TABLE VII.—WORLDWIDE TERPENE EMISSION ESTIMATES

Investigator	Year	Method	Estimate in tons
Went.....	22 (1960b)	Sum of sagebrush emissions and terpenes as percentage of plant tissues.	175×10 <sup>6</sup> .
Rasmussen and Went.....	2 (1964)	1. Bagging foliage 1 liter/10 cm <sup>2</sup> .....	23.4×10 <sup>6</sup> <sup>a</sup>
		2. Enclosure forbs 0.65 m <sup>2</sup> /m <sup>2</sup> .....	13.5×10 <sup>6</sup>
		3. Direct in situ ambient conc.....	432×10 <sup>6</sup> .
Ripperton, White, and Jeffries..	16 (1967)	Rx Rate O <sub>3</sub> /pinene.....	2 to 10×previous estimates.

<sup>a</sup> Not corrected for vertical foliage area over ground area.

<sup>20</sup> F. W. Went, "Organic matter in the atmosphere and its possible relation to petroleum formation," Proc. N.A.S., 46:212 (1960 b).

<sup>27</sup> L. A. Ripperton, O. White, and H. E. Jeffries, "Gas Phase Ozone-pinene Reactions," Div. of Water, Air, and Waste Chemistry, 147th National Meeting American Chemical Society, Chicago, Ill., pp. 54-56, Sept. 1967.

In truth a world-wide terpene emission estimate is an extremely tenuous figure and presently only of value as a resource guideline. Terpene emissions from trees are real, but their quantitative impact in the atmosphere is unknown.

#### ACKNOWLEDGMENT

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Mr. McClure. I was particularly concerned about the definition of "major emitting facilities," section 302(k), during the committee markup of S. 3219. This key term assures that industrial plants of significant impact are fully covered, yet also assures that smaller activities are not subject to overzealous regulation.

The jurisdictional term "major emitting facilities" is of great importance, and has been given a carefully drafted two-part definition. For most purposes of the bill, such facilities are those sources which have the potential to emit 100 tons per year of any pollutant, but recognizes that this is not always an appropriate test. As the committee report states, this is an appropriate standard for large industrial sources, and one presently used by EPA and the States.

The second part of the definition also provides the basis for a review-and-permit mechanism to guard against significant deterioration. However reasonable and necessary this process may be for very large sources, it would be unreasonable for smaller operations. A small gasoline jobber, or a heating plant at a community college, could have the potential to emit 100 tons of pollution annually. Had the committee chosen to use a broad definition for significant deterioration, many of these limited operations would be subject to unnecessary controls. As I noted in the markup sessions, regulation of steel mills and other heavy industries should not preclude a junior college from expanding its heating plant.

To protect such smaller operations from regulation, the committee has approved a restrictive list of specific industrial categories to be included in the no-significant-deterioration review. The 28 categories of industry are delineated in the bill itself, avoiding any misinterpretations of intent. The Administrator is given the discretion to add to this list but the list used in the bill clearly indicates the intention to limit the designation to the carefully restricted types listed.

Earlier proposed language introduced the list of categories with the phrase "including but not limited to" and closed with vague wording allowing the Administrator of EPA to add on to the list. Industries to be included in the permit and review process are now explicitly limited to the 28 listed categories. The Administrator is given the discretion to add such other "major emitting facilities" as he "determines to be significant potential sources of air pollutants," and only industries of the type listed shall be added.

The Administrator does need some flexibility. As new technologies and plants arise, he should have the requisite power to act. This language allows such action, and in fact mandates it. But, only when such sources would be significant major emitters. This is a vital safeguard both against new polluters and over-regulation.

Other members of the committee and myself are pleased that we have succeeded in stating precisely what is included, what is not, and what role the Administrator plays.

I ask that a memorandum by B. J. Steigerwald, of the Office of Air Quality Planning and Standards, dated May 3, 1976, be printed in the Record.

#### ONE HUNDRED TON POTENTIAL SOURCES

(B. J. Steigerwald, Director, Original Signed by Office of Air Quality Planning and Standards and Roger Strelow, Assistant Administrator for Air and Waste Management)

The following memo is to inform you of some potential impacts to our revolving NSR program which are likely to be incurred under the current draft amendments to the Clean Air Act.

The Congress in both Houses is now considering bills that require the review of all stationary sources that would locate in a non-attainment area<sup>1</sup> with an annual emission potential of at least 100 tons for any criteria pollutant. Congress has attached the label of "major source" or "major emitting facility" to such sources. However, a point source which has this potential is in many cases quite small. For example, a municipal incinerator for a community of 7000 people, an oil-fired heating system for a 3000-student high school, a typical beer processing plant, or most average sized commercial and industrial boilers (not fired by gas) all have a pollution potential greater than 100 tons per year. Fortunately, most truly small boilers and typical space heating operations would not be covered. Tables 1 and 2 identify several source types for which the average sized facility has at least 100 ton potential. (These tables have already been provided to Barbara Brown of OTLUP for use in her discussions with Congressional staff per her request.)

Many of the small sources that are currently excluded from State NSR and even some that are listed in our proposed Appendix Q<sup>2</sup> would also be covered under the current Congressional definition. For example, Appendix Q and many State regulations typically exempt gas fuel burning units of less than 250 million BTU's per hour heat input which have the potential to emit 240 tons per year of NO<sub>x</sub>. (As you know, the review of NO<sub>x</sub> sources has not been heretofore stressed by this Agency.) Table 3 lists several examples of sources exempted by State NSR regulations which can potentially emit more than 100 tons per year.

As a result, the implementation of our NSR policy for non-attainment areas under the 100 ton potential rule is likely to cause large new demands for detailed preconstruction reviews. Many smaller sources typically included as part of the area source growth allowed for in the SIP's would now be forced to experience a thorough air quality analysis. In addition, these smaller sources would often be required to undergo a mass-emission tradeoff analysis which in turn would necessitate an accompanying SIP revision. Table 1 was used to estimate that nearly 3,000 sources of particulate matter alone per year could exceed 100 tons in potential. Of course, the actual number of reviews and subsequent resource demands will depend on the number of sources attempting location, expansion, or modification in non-attainment areas.

I support the concept that most if not all 100 ton potential sources should be reviewed to insure the installation of necessary controls to meet applicable emission limitations. However, a full NSR (i.e., both an air quality modeling and emission limitation analysis with requirements for mass emission tradeoffs as needed) should not be required of *all* 100 ton potential sources if our goal of performing a manageable number of NSR's is to be realized. We recognize that any "major source" criteria to require a detailed and complete NSR must be necessarily more complex than a simple 100 ton potential cut size. That is, the actual need for air quality and mass emission tradeoff analyses depends on many other source and site specific variables. Existing air quality, actual source emis-

<sup>1</sup>The bill before the House goes even further in its use of the 100 ton potential rule. All 100 ton potential sources are covered under their PSD program and in their plan to accelerate development of additional NSPS over the next 4 years.

<sup>2</sup>The proposed Appendix Q to 40 CFR Part 51 lists minor sources which States may simply exclude from the NSR without a specific demonstration that the sources have a negligible air quality impact.

sions, terrain, meteorological conditions and effective stack height can all affect the need to review prospective new sources in detail.

Because the Congress may be unaware of the number and type of sources that have a 100 ton potential, I suggest that we pass this information on to them through the Office of Legislation. It should be noted, however, that a good alternative to the Congressional approach is not now available, except that they authorize us to determine what constitutes a "major source."

For your information, OAQPS is in the process of establishing criteria to determine which sources should undergo a complete NSR review and not solely an emission limitation analysis. The guidance is likely to identify those sources of greater than 100 ton potential that must always face a full NSR and outline procedures for determining on a case-by-case basis which of the remaining 100 ton potential sources must face a more detailed analysis.

#### SUMMARY OF TYPICAL SOURCE EMISSIONS<sup>1</sup>

Source category	Average plant size	New plants per year	Potential emissions (tons per year)	Pollutant	BACT emissions from typical plant
Phosphate rock processing	1,200 TPD	4	50,370	PM	1,010
Fuel conversion (coal gasification)	250 MCFD	2	90,228	SO <sub>2</sub>	3,650
Lime plants	450 TPD	6	16,671	PM	17
Sulfur recovery plant	140 TPD	8	10,219	SO <sub>2</sub>	51
Carbon black plant (furnace process)	120 TPD	4	98,550	CO	99
Kraft pulp mill	800 TPD	5	29,302	SO <sub>2</sub>	714
Primary copper smelter	1,000 TPD	2	237,250	SO <sub>2</sub>	1,185
Municipal incinerator	300 TPD	25	502	PM	75
Petroleum refinery	150,000 BPD	3	788,400	HC	65,700
Byproduct coke oven	180 TPH	2	12,614	SO <sub>2</sub>	2,234
Portland cement plant	100 TPH	7	32,850	PM	175
Primary zinc smelter	550 TPD	1	112,420	SO <sub>2</sub>	1,686
Iron and steel mill	200 TPH	14	125,144	PM	1,756
Coal cleaning plants	465 TPH (dryer)	3	40,326	PM	202
Fossil-fuel steam electric units	600 MW	40	183,960	SO <sub>2</sub>	18,396
Primary lead smelter	293 TPD	1	35,292	SO <sub>2</sub>	705
Sulfuric acid plant	750 TPD	20	7,528	SO <sub>2</sub>	41
Primary aluminum	500 TPD	5	8,395	PM	164
Ferroalloy production	7 TH	1	13,823	PM	138
Sludge incinerator	0.5 TPH	76	263	PM	4
Refuse-fuel boiler	17.3 TPH	17	27,733	PM	277
Rubber (styrene butadiene)	8,650 TPH	7	3	PM	<1
Starch	7.5 TPH	4	253	PM	<1
Deep fat frying	359 ± H	134	9	PM	<1
Animal feed deflour	5.7 TPH	1	15,604	PM	2
Beer processing	3,900 gal/hr	41	93	PM	5
Grain handling:					
Processing	2 TPH	726	53	PM	<1
Drying	58 TPH	50	152	PM	2
Cleaning	6.3 TPH	231	166	PM	2
Handling	13 TPH	97	1,319	PM	2
Whiskey manufacturing	5,900,000 gal/yr	20	129	PM	6
Glass manufacturing (soda lime)	8.5 TPH	28	74	PM	1
Steel foundries	130 TPD	62	247	PM	3
Lead acid battery	5,900 BAT/D	5	119	PM	1
Glass manufacturing (opal)	65 TPD	1	27	PM	<1
Paint manufacturing	1.9 10 <sup>3</sup> gal/yr	50	-----	PM	<1
Dele gent	17.5 TPH	1	6,899	PM	35
Charcoal	5.9 TPD	37	379	PM	4
Vegetable oil	4.1 TPD	10	1,131	PM	11
Fiberglass:					
Textile	4.7 TPH	3	1,729	PM	30
Wool	4.7 TPH	3	1,976	PM	178
Frit	0.5 TPH	13	39	PM	<1
Flyash sintering	200 TPH	1	96,360	PM	96
Stone quarrying	100 TPH	116	6,789	PM	18
Clay sintering	420 TPD	1	1,593	PM	2
Secondary brass and bronze	25 TPD	2	307	PM	1
Concrete batching	65,320 TPD	337	3	PM	<1
Ammonium sulfate	17.3 TPH	15	1,495	PM	75
Nitrate fertilizers	15.5 TPH	11	864	PM	17
Feed milling	5.2 TPH	33	456	PM	2
Smoked meat	2.3 TPH	10	3	PM	1
Bagasse burning	51.4 TPH	1	4,953	PM	495
Cast iron foundry (electric furnace)	8 TPH	19	155	PM	2

See footnote at end of table.

SUMMARY OF TYPICAL SOURCE EMISSIONS <sup>1</sup>—Continued

Source category	Average plant size	New plants per year	Potential emissions (tons per year)	Pollutant	BACT emissions from typical plant
Secondary copper:					
Smelting.....	3.2 TPH.....	5	1,186	PM	20
Matl. han.....	3.2 TPH.....	2	2,971	PM	12
Autobody inctr.....	3.4 TPH.....	3	30	PM	8
Pathological inctr.....	680 #/H.....	3	19	PM	3
Soap manufacturing.....	2.3 TPH.....	1	131	PM	<1
Polypropylene.....	7.1 TPH.....	8	93	PM	1
PVC plants.....	7.1 TPH.....	5	1,088	PM	11
Boilers:					
10-250×10 <sup>6</sup> Btu/hr.....	10 <sup>7</sup> Btu/hr.....	1,446	876	PM	53
0.3-10×10 <sup>6</sup> Btu/hr.....	1.3×10 <sup>6</sup> Btu/hr.....	11,215	6	PM	2
Ceramic clay.....	4 TPH.....	30	3,075	PM	31
Brick and clay—Related products.....	4 TPH.....	61	2,286	PM	23
Gypsum.....	22.5 TPH.....	3	12,978	PM	30
Perlite.....	0.7 TPH.....	6	64	PM	3
Castable refractories.....	0.5 TPH.....	8	556	PM	10
Mineral wool.....	2.2 TPH.....	22	312	PM	35
Sand and gravel.....	19.4 TPH.....	336	8.5	PM	<1
Asphalt roofing:					
Blowing.....	50 TPH.....	1	920	PM	9
Saturator.....	50 TPH.....	1	1,599	PM	20
Asphalt batch.....	150 TPH.....	139	6,750	PM	20
Secondary lead.....	50 TPD.....	2	2,464	PM	9
Secondary zinc:					
Distillation.....	4.6 TPH.....	1	927	PM	34
Sweating.....	2.8 TPH.....	1	295	PM	11
Secondary magnesium smelting.....	148 #/H.....	1	2	PM	<1
Secondary aluminum:					
Sweating.....	0.5 TPH.....	5	72	PM	4
Reverb.....	1.5 TPH.....	9	1,281	PM	9
Plywood/veneer.....	41 10 <sup>6</sup> ft <sup>2</sup> /yr.....	43	2,706	PM	26
Pulpboard.....	500 #/H.....	80	1	PM	<1
Cotton ginning.....	13 bales/hr.....	5	683	PM	27

<sup>1</sup> This table was constructed only to give some insight into the types and numbers of new sources that can exceed 100 tons in yearly potential. Year round source operation at full capacity was assumed in computing the annual emission potential of each source.

Reference: Impact of New Source Performance Standards on 1985 National Emissions from Stationary Sources—vol. I TRC—the Research Operation of New England, October 1975.

TABLE 2.—FUEL BURNING EQUIPMENT

Size of unit (10 <sup>6</sup> Btu/Hr), type, and fuel	Average		Potential emissions (tons per year)					Bact emissions (tons per year)		
	Percent 5	Size (10 <sup>6</sup> Btu per hour)	PM	Potential emissions (tons per year)			HC	PM	SO <sub>x</sub>	NO <sub>x</sub>
				SO <sub>x</sub>	NO <sub>x</sub>	CO				
1 to 10, commercial/institution:										
Coal.....	1.5	5.0	14	57	6	10	3	3	15	6
Gas.....	1.0	2.0	<1	<1	1	<1	<1	<1	<1	1
Oil.....	1.0	3.0	1	12	4	<1	<1	<1	12	4
10 to 100, commercial/institution:										
Coal.....	1.5	40.0	728	457	120	16	8	15	65	40
Gas.....	1.0	24.0	2	<1	20	1	1	2	<1	20
Oil.....	1.0	36.0	23	157	69	6	3	4	157	69
10 to 100, industrial:										
Coal.....	1.5	45.0	819	513	135	18	9	16	72	45
Gas.....	1.0	34.0	3	<1	28	2	1	1	<1	28
Oil.....	1.0	23.0	15	101	45	2	2	3	3	45
Over 100, commercial/institution:										
Coal.....	1.5	190.0	4,237	2,156	681	37	11	43	134	486
Gas.....	1.0	378.0	24	<1	960	27	2	5	1	681
Oil.....	1.0	241.0	56	1,104	696	20	13	10	148	202
Over 100, industrial:										
Coal.....	1.5	339.0	7,560	3,847	1,215	66	20	76	231	865
Gas.....	1.0	264.0	17	<1	1,672	19	1	3	1	477
Oil.....	1.0	245.0	57	1,123	710	20	14	10	150	504
1,000 to 10,000, electric utility boiler:										
Coal.....	2.3	5,320.0	118,626	92,571	19,065	1,059	318	1,192	5,579	13,571
Gas.....	7	5,320.0	124	17,000	1,636	47	31	1	1,020	1,162
Oil.....	2.3	14,750.0	668,945	522,016	107,499	5,973	1,792	6,723	31,463	76,542
3,000 MW powerplant: Coal.....	2.3	14,750.0	668,945	522,016	107,499	5,973	1,792	6,723	31,463	76,542
0.1, residential space heating: Coal.....	1.0	1	.12	.23	.02	.54	.12	.033		
0.1, international Falls, Minn.: Oil.....	.5	.1	.01	.07	.01	.005	.033			

1 MW units.

## ASSUMPTIONS

A—1.5 percent sulfur and 1.0 percent sulfur were the respective median values used for small to medium-sized coal-fired and oil-fired boilers. (Distributions of Industrial and Commercial—Institutional External Combustion Boilers. Research Triangle Institute, February 1975). The actual values ranged greatly with 0.1 percent by number exceeding 5.0 percent sulfur by weight. 2.3 percent sulfur and 0.7 percent sulfur were used for the larger boilers (larger than  $100 \times 10^6$  BTU/hr) and reflect the average values used in power plants for 1974. 11,000 BTU/lb, and 150,000 BTU/gal, and 140,000 BTU/gal were the heating values assumed for the coal, residual oil and distillate oil combusted and are in accordance with the typical values cited in AP-42 Compilation of Air Pollution Emission Factors (second edition, April 1975). Bituminous coal with 7 percent ash was assumed for all cases involving coal-fired boilers. Residual oil combustion was assumed for all oil-fired units greater than  $10 \times 10^6$  BTU/hr heat input.

B—Average sizes for all boilers except for units over  $1000 \times 10^6$  BTU/hr were computed from 1975 GCA report (Volume II Preliminary Environmental Assessment of Conventional Stationary Combustion Systems, GCA Corporation, September 1975). Herein existing average size was assumed to represent the future average-sized unit. The average unit size for boilers ranging from 1000 to 10,000 BTU/hr was computed from FPC projections for future coal-fired power plants (April 1, 1974).

C—Year round operation (8760 hrs/yr except for space heating example) and AP-42 emission factors were assumed in computing potential emissions. Spreader stoker firing was used for all coal-fired units under  $100 \times 10^6$  BTU/hr.

D—BACT emissions were generally calculated using emission factors from 1975 TRC report (Impact of New Source Performance Standards on 1985 National Emissions from Stationary Sources—Volume I, TRC—The Research Corporation of New England, October 1975).

(Size $10^6$ Btu/hr) and fuel	Percent control efficiency per pollutant under BACT		
	PM	SO <sub>2</sub>	NO <sub>x</sub>
1 to 10: Coal.....	81	73	0
1 to 10: Oil, gas.....	81	0	0
10 to 100: Coal.....	98	86	67
10 to 100: Oil, gas.....	98	0	0
Greater than 100: All fuels.....	99	94	29

TABLE 3.1—SOURCES EXEMPT FROM STATE NSR LIKELY TO BE POTENTIALLY LARGER THAN 100 TONS PER YEAR<sup>2</sup>

State and exempted source	Pollutant	Potential emissions (tons/year)
California: <sup>3</sup>		
Sources which emit $\leq 150$ #/hr or $1,500$ #/D.....	Co.....	$\leq 274$
Sources which emit $\leq 15$ #/hr or $150$ #/D.....	Other.....	<sup>4</sup> $\leq 137$
Connecticut: Manufacturing operations which emit $\leq 30$ #/h.....	All.....	<sup>5</sup> $\leq 235$
Delaware:		
Operations (except for 13 source types) $\leq 25$ T/Y which emit.....	All.....	<sup>4</sup> $\leq 125$
Gas fired units $\leq 250 \times 10^6$ Btu/hr.....	NO <sub>x</sub> .....	$\leq 240$
Illinois: Stationary engines $\geq 1,500$ hp.....	NO <sub>x</sub> .....	.....
Indiana:		
Fuel-burning equipment $\leq 250 \times 10^6$ Btu/hr.....	NO <sub>x</sub> .....	$\leq 240$
Sources $\leq 250$ #/D.....	EO.....	<sup>6</sup> $\leq 188$
Iowa: Fuel-burning units $\leq 250 \times 10^6$ Btu/hr.....	NO <sub>x</sub> .....	$\leq 240$
Kentucky: Fuel-burning units $\leq 250 \times 10^6$ Btu/hr.....	NO <sub>x</sub> .....	$\leq 240$
Maryland:		
Incinerators $\leq 250 \times 10^6$ Btu/hr.....	CO.....	$\leq 450$
Rock crushers $\leq 5$ TPH.....	PM.....	$\leq 285$
Nebraska: All point source causing $\leq 100$ tons/yr.....	All.....	<sup>7</sup> $\leq 100$
New Mexico: Gas fired fuel-burning units $\leq 250 \times 10^6$ Btu/hr.....	NO <sub>x</sub> .....	$\leq 240$
North Carolina: Gas fired units $\leq 250 \times 10^6$ Btu/hr.....	NO <sub>x</sub> .....	$\leq 250$
Rhode Island: Incinerators $\leq 2,000$ #/hr.....	CO.....	$\leq 450$
Wisconsin: Fuel-burning units $\leq 250 \times 10^6$ Btu/hr.....	NO <sub>x</sub> .....	$\leq 240$

<sup>1</sup> Reference: Environmental Reporter.

<sup>2</sup> This list is not meant to be all inclusive.

<sup>3</sup> Proposed by ARB.

<sup>4</sup> Assuming 80 percent control.

<sup>5</sup> Assuming 80 percent controls, 10-hr day, 6-day week.

<sup>6</sup> Assuming 80 percent controls/300 days operation.

<sup>7</sup> Actual emissions depend on number of controls.

Mr. BARTLETT. I would like to speak to the nondegradation of air quality provisions of the bill. It is my belief that the amendments relating to nondegradation would seriously affect future economic growth, employment, domestic energy supplies, and capital availability for productive investments without providing significant benefits in air quality for the protection of the public health and welfare.

The National Ambient Air Quality Standards—NAAQS—were established to protect the public health and welfare. The proposed amendments would override the NAAQS and limit the allowable ambient air concentrations in most “clean” areas to levels well below the NAAQS and only to a small fraction of the NAAQS in some areas. I see these provisions as representing a “no growth, no win policy” for our rural areas.

Nondegradation areas are those areas where air quality meets national secondary standards for either sulfur dioxide ( $\text{SO}_2$ ) or particulates or both. Virtually the entire State of Oklahoma will fall in the nondegradation area category if section 6 of this bill is allowed to become law. This circumstance will certainly play havoc with Oklahoma’s industrial development program. For this reason and the reasons stated above, I cosponsored the Moss amendment to delete these provisions from the bill and instead study the matter for a better solution than is proposed in S. 3219.

I am now of the belief that a step further needs to be taken if my State, and many other States, are to be able to make any significant progress in its industry-developing program. In view of this belief, I have also cosponsored the Scott amendment, which in addition to deleting section 6 of the clean air bill and calling for a study, also provides for the suspension of the present regulations under which EPA is operating as a result of the Supreme Court decision in *Sierra Club* against *Ruckelshaus*. I believe this is a more logical way to handle this most important, and far-reaching matter.

Because the impacts of the proposed nondegradation regulations are very complicated, and also very significant, indepth definitive studies, which have not been made on many of the impacts, should be carefully made. However, preliminary studies on some of the effects this legislation would have on future energy supplies are as follows:

First. A sulfuric acid plant meeting EPA’s new source performance standards to produce acid for the acid-leaching in a large uranium mill and with a stack height of less than 200 feet could not be located in an EPA class II area based on  $\text{SO}_2$  emissions. This plant would also have to be located over 20 miles from a class I area. These studies did not consider other sulfur oxides from this mill, did not consider other pollutants and did assume the maximum class II area increment was available for the acid plant emissions.

Second. The proposed legislation and the ultimate regulations would seriously affect the timing and economics of development of coal deposits between now and the early 1980’s and in addition the development of nuclear, oil shale, and coal conversion projects as domestic energy supplies. The impact would seriously impede our goal to develop the Nation’s future energy supplies.

Third. Future supplies of gas and oil could be affected as the nondegradation regulations are extended to hydrocarbons, nitrogen oxides, carbon monoxide, and other pollutants that EPA decides are to be

included as provided in the proposed legislation. Meeting these more restrictive hydrocarbons and other standards could increase the cost of gas and oil. Such standards might also restrict oil and gas production in some areas and present siting problems for new refineries and plants as well as expansions.

Many of the areas that would be designated as class I are in the western States. Many of these same areas have the energy reserves that will have to be developed for future domestic energy supplies. The nondegradation proposals would prevent development of many alternate fuel sources to the level we need to provide greater energy independence.

The National Ambient Air Quality Standards are more than adequate for the protection of public health and welfare and more restrictive standards such as the nondegradation plan in the Clean Air Act Amendments being considered are unnecessary and unjustified on environmental considerations. Such a plan could have serious detrimental impact on our Nation's growth, on employment opportunities, and on domestic energy supplies.

These consequences would certainly apply to Oklahoma. Activities in Oklahoma that could be seriously affected by these amendments are metal smelters, utilization and mining of coal, new gasoline plants and refineries, and agriculture activities that produce particulate emissions.

School buildings, shopping malls, and similar-sized facilities with heating plants of 250 million Btu's would be subject to control under the proposed act. I feel it is unconscionable for Congress even to be considering such provisions until the full consequences are measured and evaluated.

To construct new homes, schools, business, and so forth, a State would have to assure that the air quality impact of growth associated with the new facility would not adversely affect the EPA standards. Existing facilities would be subject to increasing penalties. One can imagine that a number of marginal industries, operating in rural areas, would shut down.

A rural area that wants to build a vocational-technical school, surely does so with the hope of attracting industry with the new reservoir of skilled workers that the school will produce. This kind of initiative on the part of a State would most certainly be curtailed if the proposed Clean Air Act amendments are enacted.

As a former Governor of the State of Oklahoma, I can personally testify that one of the goals of Oklahoma is a higher quality of economic growth for its people while still respecting the environment. Oklahomans very much want to achieve both, but not one—either one—at the expense of the other. However, while this legislation is couched in rhetoric regarding the "quality of life," it ignores the fact that a decent and satisfactory life involves more than "pristine air".

(The following proceedings occurred during consideration of the Tax Reform Act.)

Mr. ALLEN. I would like to state that for 2 days I have been discussing an amendment I had planned to offer to the Randolph amendment, which is amendment No. 2101. I would like to have an opportunity to offer that amendment prior to the time of drawing down the

Randolph amendment, so that my amendment will appear in the Record.

Mr. MANSFIELD. It is my understanding that the Randolph amendment will follow the disposal of the Moss amendment.

Mr. ALLEN. Since I have been stating I was going to present it. I would like to have an opportunity of offering my amendment.

I want to call it up at this time, or prior to it being withdrawn.

Mr. MANSFIELD. Well, all right.

The text of the unanimous-consent agreement is as follows:

#### UNANIMOUS-CONSENT AGREEMENT

Ordered, That on Tuesday, August 3, 1976, at not later than 8:30 a.m., the Senate resume consideration of S. 3219 (Order No. 685), a bill to amend the Clean Air Act, as amended, and that debate on any amendment (except an amendment by the Senator from Colorado (Mr. Hart) and an amendment by the Senator from Oregon (Mr. Packwood), on each of which there shall be 2 hours, and an amendment by the Senator from Virginia (Mr. Scott), on which there shall be 1½ hours, to be divided with 1 hour to the mover of such and ½ hour to the manager of the bill), debatable motion, appeal, or point of order which is submitted or on which the Chair entertains debate shall be limited to 1 hour, to be equally divided and controlled by the mover of such and the manager of the bill: Provided, That in the event the manager of the bill is in favor of any such amendment, debatable motion, appeal, or point of order, the time in opposition thereto shall be controlled by the Minority Leader or his designee.

Ordered further, That immediately upon resuming consideration of S. 3219 on Tuesday, August 3, 1976, the amendments by the Senator from Utah (Mr. Moss) shall be the pending question and shall be considered en bloc, with the vote thereon to occur not later than 1:30 p.m. on Tuesday, August 3, 1976: Provided, That at any time during consideration of the Moss amendment, the Senator from Virginia (Mr. Scott) may offer an amendment to the Moss amendment, with debate thereon by the proponents to be limited to 2 hours: Provided further, That the Senator from Maine (Mr. Muskie) shall have a total of 1 hour in opposition to the two amendments to be offered by the Senator from Utah (Mr. Moss) and the Senator from Virginia (Mr. Scott).

Ordered further, That the vote on final passage of S. 3219 occur no later than 1:45 p.m. on Thursday, August 5, 1976: Provided, That S. 3219 shall have been the pending business of the Senate for at least 15 hours commencing with its consideration on Tuesday, August 3, 1976, including the consideration of the above mentioned amendments and amendments to be offered by the Senator from Alaska (Mr. Gravel), the Senator from West Virginia (Mr. Randolph), the Senator from Colorado (Mr. Hart), the Senator from Oregon (Mr. Hatfield), the Senator from Wisconsin (Mr. Nelson), the Senator from North Carolina (Mr. Morgan), and the Senator from Alaska (Mr. Stevens): Provided further, That the Senator from Alabama (Mr. Allen) will be reserved 2 hours included within the 15 hours for the purpose of offering amendments and motions.

#### AMENDMENT NO. 2101

Mr. ALLEN (for himself and Mr. Stone) proposes an amendment to the amendment numbered 1798 as follows:

On page 2, line 11, strike the period and insert a semi-colon and add the following: "none of which provisions shall be implemented or enforced until a period of one year shall have elapsed from the date on which the Commission submits the report required of it on the results of its study and investigation, and none of the provisions of subsection (g) of section 110 of the Act in contravention of the recommendations of said Commission as contained in said report shall be enforced or implemented."

## SENATE DEBATE ON S. 3219, AUGUST 3, 1976

Mr. Moss. The order is that my amendments 1598, 1599, and 1600 be considered en bloc. They have been written together now in a single document.

The Senator from Utah (Mr. Moss) proposes an unprinted amendment numbered 290.

The amendment is as follows:

The Clean Air Act is hereby amended by deleting section 6 and renumbering succeeding sections accordingly.

Section 37 is amended as follows:

On page 85, line 2, strike all through and including line 2 on page 88 and in lieu thereof insert the following:

SEC. 315. (a) There is established a National Commission on Air Quality which shall study and report to the Congress on—

(1) the effects of the implementation of any proposed or existing requirement on the States or the Federal Government under this Act to identify and protect from significant deterioration of air quality, areas which have existing air quality better than that specified under current national primary and secondary standards;

(2) the economic, technological, and environmental consequences of achieving or not achieving the purposes of this Act and programs authorized by it;

(3) available alternatives, including enforcement mechanisms to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population, and to achieve the other purposes of the Act;

(4) the technological capability of achieving and the economic, energy, and environmental impacts of achieving or not achieving required emission control levels for mobile sources of oxides of nitrogen (including the research objective of 0.4 gram per vehicle mile) in relation to and independent of regulation of emissions of oxides of nitrogen from stationary sources;

(5) air pollutants not presently regulated, which pose or may in the future pose a threat to public health or public welfare and options available to regulate emissions of such pollutants;

(6) the adequacy of research, development, and demonstrations being carried out by Federal, State, local, and nongovernmental entities to protect and enhance air quality; and

(7) the ability of (including financial resources, manpower, and statutory authority) Federal, State, and local institutions to implement the purposes of the Act.

(b) Studies and investigations conducted pursuant to paragraphs (1) and (2) of subsection (a) shall include—

(1) the effects of existing or proposed national ambient air quality standards on employment, energy, and the economy (including State and local), their relationship to objective scientific and medical data collected to determine their validity at existing levels, as well as their other social and environmental effects;

(2) the effects of any existing or proposed policy of prohibiting deterioration of air quality in areas identified as having air quality better than that required under existing or proposed national ambient standards on employment, energy, the economy (including State and local), the relationship of such policy to the protection of the public health and welfare as well as other national priorities such as economic growth and national defense, and its other social and environmental effects.

(c) The Commission shall, as part of any study conducted under subsection (a) (1) of this section specifically identify any loss or irretrievable commitment of resources (taking into account economic feasibility), including mineral, agricultural, and water resources, as well as land surface use resources.

(d) Such Commission shall be composed of fifteen members, including the chairman and the ranking minority Member of the Senate Committee on Public Works and the House Committee on Interstate and Foreign Commerce, who shall serve on such Commission ex officio and without vote, and eleven members of the public appointed by the President. The Chairman of such Commission shall be elected from among its members.

(e) The heads of the departments, agencies, and instrumentalities of the executive branch of the Federal Government shall cooperate with the Commission in carrying out the requirements of this section, and shall furnish to the Commission such information as the Commission deems necessary to carry out this section.

(f) A report, together with any appropriate recommendations, shall be submitted to the Congress on the results of the investigation and study concerning section (a) (4) of this section no later than March 1, 1977, and the results of the investigation and study concerning section (a) (1) of this section no later than one year after the date of enactment of the Clean Air Act Amendments of 1976.

(g) A report shall be submitted with regard to all other Commission studies and investigations, together with any appropriate recommendations, not later than three years after the date of enactment of this section.

(h) The members of the Commission who are not officers or employees of the United States, while attending conferences or meetings of the Commission or while otherwise serving at the request of the Chairman shall be entitled to receive compensation at a rate not in excess of the maximum rate of pay for grade GS-18 as provided in the General Schedule under section 5332 of title V of the United States Code, including traveltime and while away from their homes or regular places of business they may be allowed travel expenses, including per diem in lieu of subsistence as authorized by law (5 U.S.C. 4260 72b2) for persons in the Government service employed intermittently.

(i) There is authorized to be appropriated, for use in carrying out this section, not to exceed \$17,000,000.

(j) In the conduct of the study, the Commission is authorized to contract with nongovernmental entities that are competent to perform research or investigations in areas within the Commission's mandate, and to hold public hearings, forums, and workshops to enable full public participation. [See secs. 160-169 and sec. 323.]

Mr. Moss. Hopefully, we can restate just in outline form what the amendments accomplish, and make the point that it is in the interest of this country, in the interest of the environment, in the interest of all our citizens that we know where we are going before we write into law some additional regulations which may have unforeseen and detrimental effects.

The nondeterioration issue is not only environmental but it also is economic, having to do with our employment, our ability to continue growth in areas of small growth, our ability to maintain the type of society that we now have and, therefore, we ought to consider all of those factors when we consider the Clean Air Act Amendments.

Section 6, which would be eliminated by my amendment until a study is completed, would set at once in law certain nondeterioration standards that are unrealistic in many instances. There are many existing unknowns. For example:

First. Where are the "clear air areas?"

Second. What are the "baseline" concentrations of pollutants in such areas?

Third. How many facilities can be sited in a particular given area taking into account other sources not requiring permits which will be attracted by the major industrial emitting facilities?

Fourth. What are the "air quality related values" mentioned in Section 6 which the Federal land manager has an "affirmative responsibility to protect?"

Fifth. Where are the areas most likely to be designated as national parks and national wilderness areas in the future?

Sixth. What natural resources are located in areas which would be severely restricted from development because of their locations in, or proximity to, class I areas?

Seventh. What will be the cost in terms of lost tax revenues, payroll, and jobs as a result of implementation of this policy for each State?

Eighth. If development under this policy is virtually unlimited, as EPA suggests, why do we need to implement it at all?

Ninth. What are the current population trends in the country; are more people moving toward the areas which would be most severely impacted?

Tenth. If we are protecting more than esthetic values by implementation of this policy, and in fact, we are protecting health and welfare, why have not the national ambient standards been adjusted?

Eleventh. If nondeterioration cannot be related to the protection of health and welfare, does Congress have jurisdiction to implement this policy at all?

Then there is the question, of the State and Federal problem regarding clean air legislation.

The supporters of nondeterioration give as one of the primary reasons for their support, the provision in S. 3219 for a greater degree of discretionary decisionmaking by the States. They argue that the bill's rendering of the State's administrative role is more flexible than current EPA regulations, which incidentally would remain in effect if my amendments are adopted. I believe that these current regulations, imperfect though they may be, do provide for significantly greater industrial growth the new provisions called for by S. 3219.

There are competing national goals.

It is time we stopped trying to fool each other about issues involving the catch words "clean" and "environment." I am not prepared to tell you that the existing national ambient standards are adequate to protect every living person or thing in the United States. It is obvious that breathing anything short of air "pure as the driven snow" will not, under normal circumstances, enhance human health. We all recognize that any air pollutants could have adverse health effects over some period of time, on some individuals. This is no startling revelation.

Having recognized this fact, our job in setting national policy is to determine at what level, under existing technology and economic circumstances, we will accept less than pure air in order to balance this important objective against the equally important objectives of fostering a healthy economy, a healthy domestic energy industry, and a healthy job market.

Air, after all, is a natural resource and must be conserved as such. On the other hand, it must also be utilized for man's ultimate benefit. This includes the use of air to produce energy necessary for our domestic well-being.

I am not philosophically opposed to the idea of nondeterioration. Neither am I prepared to say that what is good for industry is good for America. However, anti-industry measures are not necessarily pro-environment either.

Until we know the facts, precipitate action is foolish and unwarranted.

Let us insure that in our enthusiasm to make our environment as acceptable as possible we do not start a chain reaction of two steps forward for air, and three steps backward for our total environment. We must remember that it has been man's ability to alter this environment through industrial development that enables this planet to support upward of 4 billion people. For too many of these people, change in the environment which expedites the exploitation of Earth's resources, including air, could not come soon enough. I think we have learned the hard lessons of the past that we cannot act irresponsibly in using our environment. But we cannot stop using our environment, either.

#### MAKING POLICY FOR 1976 AND THE FUTURE

Proponents of nondeterioration continually site language contained in previous enactments of the Congress as the original basis for the concept of nondeterioration. Even if we accept this "history" as accurate, let us not forget that our responsibility is to examine, define, and where appropriate, enact public policy for the benefit of our citizens in 1976 and hereafter; not to let ancient history, whether legislative or otherwise, dictate our course. I doubt that there is a Member of this body in office in 1970, who realized that the policy of nondeterioration was embodied in the Clean Air Act that we then voted on.

We must recognize that air is a renewable resource. It does cleanse itself when pollution levels decrease. Pollution levels have been decreasing in many areas in recent years largely because of the existing act. Contrary to the impression advanced by proponents of nondeterioration, the skies over the national parks and wilderness areas are not going to turn black, with helpless animals choking from pollution, if we implement a comprehensive and necessary 1-year study by deleting nondeterioration from this bill. We should consider it again with facts in hand.

In order that my colleagues might better understand the policy of nondeterioration, I have prepared a map which points out rather startlingly the full impact of section 6 on the country.

This map was prepared from data obtained directly from the regional offices of EPA, whenever such information was available, and from various State air pollution control agencies when it was not. It represents the most currently available information in existence. Undoubtedly, some of this information will change as future monitoring is done and as new monitoring techniques are developed. Nevertheless, this data forms the basis for present decisionmaking by EPA and by the States, under existing Clean Air Act provisions. It is the best data we have at the present time.

I would also like to stress, that what we are talking about here in the nondeterioration section is whether or not we can continue to have balanced and controlled growth in this country. Growth is a thing that we need very much as our population continues to increase and especially do we notice that in the western part of our country.

I also point out to the chairman that those who are concerned with this matter have announced their support of the Moss amendment.

The National Construction Industry Council, formed in 1974, speaks with a single voice for 30 associations in the construction in-

dustry representing contractors, suppliers, design professionals, and others associated with industry.

The National Construction Industry Council collectively, and its member associations individually, have reviewed the subject of this legislation at great length and with sincere recognition of the need for clean, healthy environment, to which all their members subscribe.

For this reason, the National Construction Industry Council is in complete agreement with the amendment offered by this Senator, which would prohibit the adoption of nondeterioration as a policy until a thorough investigation of the impact and consequences of the proposal has been conducted.

#### STATEMENT ON BEHALF OF THE NATIONAL CONSTRUCTION INDUSTRY COUNCIL

The National Construction Industry Council, formed in 1974, speaks with a single voice for 30 (thirty) associations in the construction industry representing contractors, suppliers, design professionals and others associated with our industry.

The following members join in this submission:

- American Concrete Paving Association.
- American Consulting Engineers Council.
- American Institute of Architects.
- American Institute of Steel Construction, Inc.
- American Road Builders Association.
- American Society of Civil Engineers.
- American Society of Landscape Architects.
- American Subcontractors Association.
- Associated Builders and Contractors, Inc.
- Associated Equipment Distributors.
- Associated General Contractors of America, Inc.
- Associated Landscape Contractors of America, Inc.
- Ceilings and Interior Systems Contractors Association.
- Concrete Reinforcing Steel Institute.
- Council of Construction Employers, Inc.
- Mechanical Contractors Association of America, Inc.
- National Asphalt Pavement Association.
- National Association of Plumbing-Heating-Cooling Contractors.
- National Constructors Association.
- National Council of Erectors, Fabricators, and Riggers.
- National Crushed Stone Association.
- National Electrical Contractors Association.
- National Society of Professional Engineers.
- National Utility Contractors Association, Inc.
- Portland Cement Association.
- Power and Communications Contractors Association.
- Prestressed Concrete Institute.
- Producer's Council, Inc.
- Sheet Metal and Air Conditioning Contractors National Association.
- Society of American Registered Architects.

NCIC collectively, and its member associations individually, have reviewed the subject legislation at great length and with a sincere recognition of the need for a clean, healthy environment to which all our members subscribe. NCIC believes that legislation such as this must reconcile the need for protecting our environment with the need to accommodate population growth and maintain a viable economy. Unfortunately, the nondeterioration provisions included in the Clean Air Act Amendments, currently being considered in Congress, and which are the subject of this statement, do not have the effect of achieving such a balance. These provisions superimpose a radically stringent set of standards over existing standards before the effect of meeting either have been determined. Further, this is being done at a time when this country is engaged in a precarious recovery from a severe recession. Congress has not had time to ascertain the effects such a policy would have on economic recovery, employment, energy conservation and other national goals. The uncertainty surrounding the concept of non-deterioration could easily be dispelled if Congress would endeavor to study the ramifications of such legislation.

For this reason, the National Construction Industry Council is in complete agreement with the amendments offered by Senator Moss which would prohibit the adoption of non-deterioration as a policy until a thorough investigation of the impact and consequences of the proposal has been conducted.

Mr. Moss. I ask that a letter which has been sent to me by President Ford in which he states strongly that he supports the Moss amendment on the nondeterioration section be printed.

THE WHITE HOUSE,  
Washington, D.C., May 28, 1976.

HON. HARLEY O. STAGGERS,  
*Chairman, Interstate and Foreign Commerce Committee,  
House of Representatives, Washington, D.C.*

DEAR MR. CHAIRMAN: Both Houses of the Congress will soon consider amendments to the Clean Air Act of 1970. There are several sections of both the Senate and House amendments, as reported out of the respective committees, that I find disturbing. Specifically, I have serious reservations concerning the amendments dealing with auto emissions standards and prevention of significant deterioration.

In January 1975, I recommended that the Congress modify provisions of the Clean Air Act of 1970 related to automobile emissions. This position in part reflected the fact that auto emissions for 1976 model autos have been reduced by 83% compared to uncontrolled pre-1968 emission levels (with the exception of nitrogen oxides). Further reduction would be increasingly costly to the consumer and would involve decreases in fuel efficiency.

The Senate and House amendments, as presently written, fail to strike the proper balance between energy, environmental and economic needs. Therefore, I am announcing my support for an amendment to be cosponsored by Congressman John Dingell and Congressman James Broyhill, which reflects the position recommended by Russell Train, Administrator of the U.S. Environmental Protection Agency. This amendment would provide for stability of emissions standards over the next three years, imposing stricter standards for two years thereafter. Furthermore, a recent study by the Environmental Protection Agency, the Department of Transportation and the Federal Energy Administration indicates that the Dingell-Broyhill Amendment, relative to the Senate and House positions, would result in consumer cost savings of billions of dollars and fuel savings of billions of gallons. Resulting air quality differences would be negligible. I believe the Dingell-Broyhill Amendment at this point best balances the critical considerations of energy, economics and environment.

I am also concerned about the potential impact of the sections of the Senate and House Committee Amendments that deal with the prevention of significant deterioration of air quality. In January 1975, I asked the Congress to clarify their intent by eliminating significant deterioration provisions. As the respective Amendments are now written, greater economic uncertainties concerning job creation and capital formation would be created. Additionally, the impact on future energy resource development might well be negative. While I applaud the efforts of your committee in attempting to clarify this difficult issue, the uncertainties of the suggested changes are disturbing. I have asked the Environmental Protection Agency to supply me with the results of impact studies showing the effect of such changes on various industries. I am not satisfied that the very preliminary work of that Agency is sufficient evidence on which to decide this critical issue. We do not have the facts necessary to make proper decisions.

In view of the potentially disastrous effects on unemployment and on energy development, I cannot endorse the changes recommended by the respective House and Senate Committees. Accordingly, I believe the most appropriate course of action would be to amend the Act to preclude application of all significant deterioration provisions until sufficient information concerning final impact can be gathered.

The Nation is making progress towards reaching its environmental goals. As we continue to clean up our air and water, we must be careful not to retard our efforts at energy independence and economic recovery. Given the uncertainties created by the Clean Air Amendments, I will ask the Congress to review these considerations.

Sincerely,

GERALD R. FORD.

Mr. Moss. I also submit a resolution that was adopted by the National Association of Homebuilders urging the Senate to adopt the Moss amendment to S. 3219.

SPECIAL COMMITTEE ON FEDERAL GOVERNMENTAL AFFAIRS, NATIONAL COMMISSION  
ON AIR QUALITY STUDY

Whereas, the Senate is considering legislation (S. 3219) which would, among other things, enact provisions designed to prevent the significant deterioration of air quality in those areas of the country whose air quality is cleaner than any existing ambient air standard, and

Whereas, no reliable information exists on the impact the proposed significant deterioration provisions will have on the economic growth of the nation:

Whereas, Senator Moss has proposed amendments to S. 3219 which will strike the section dealing with significant deterioration and will direct the National Commission on Air Quality to conduct a one-year study on the economic, technological and environmental effects of preventing significant deterioration of air quality; Now, therefore, be it

*Resolved*, That the National Association of Home Builders urges the Senate to adopt the Moss amendments to S. 3219.

Mr. Moss. I would like to explain what the map represents.

GENERAL BACKGROUND

The policy of nondeterioration called for by section 6 of the Public Works Committee bill requires that those areas which have air quality better than existing primary or secondary standards, must maintain that air quality within very narrow incremental increases of further deterioration. Only specified increments of sulfur dioxide and particulate matter are to be allowed in each of the two classes established by the section.

We start with a plain white map of the country. The proponents of the nondeterioration policy often suggest that this policy will affect only the air quality over our national parks and wilderness areas. Certainly it is those areas which to date have received the lion's share of the discussion. If this proposed policy did in fact only impact those areas, the amendments I have proposed would not have received the wide support they have received. All of us want to protect these important national treasures. As a major participant in the creation of three national parks in Utah, and others across this country over a period of 14 years, I think I stand at the forefront of those advocating their future protection and preservation.

FIRST OVERLAY

However, since the language of section 6 clearly states that the policy of nondeterioration would apply to any area of the country where the air quality for SO<sub>2</sub> or particulate matter is better than the national standards, areas which do not meet the national standards for both pollutants are necessarily excluded from any substantial development. These excluded areas are shown in yellow on the first overlay. To be more specific, the areas which are marked in yellow are presently in violation of existing national ambient air quality standards, NAAQS, for both SO<sub>2</sub> and particulates. As a result, existing law already prohibits further expansion or development of industrial facilities which emit these pollutants.

I quickly add that any monitoring station which indicates a violation of a national air quality standard twice in a year, anywhere in the region, identifies that entire air quality control region in which the monitor is located, as being in violation. If the air quality control region is large, such as is the case in Nevada, the map indicates that the whole region is in violation. Unfortunately, with existing EPA data, this is the closest we can get to approximating the reality of the situation. Obviously, more study is needed and more specific State-by-State information should be gathered. My amendments would facilitate this need. The only present alternative is to use the data, in spite of itself, to arrive at whatever conclusions are desired. This is hardly a satisfactory procedure.

Returning to the map, one can conclude that major industrial facilities can be located in the remaining white areas, as long as these facilities do not exceed the appropriate nondeterioration increments provided for by the committee bill. Right? Well, not quite. The proponents of nondeterioration overlook the fact that "full increments" do not exist in many areas of the country. As I have said, the committee bill allows only small incremental increases in the level of  $\text{SO}_2$  and particulates beyond an established background level. This background level has not been determined for many regional areas. I am sure Senators will agree that until they are established any further policy decisions are premature. These background levels can vary considerably from region to region and even within the same region. Particular regional areas that have been examined show that the already very small incremental allowances are thereby further diminished by these background levels. This occurs because the background level of a given region can approach or even exceed the national ambient air quality standard itself. A full increment of developable air is thereby precluded.

#### SECOND OVERLAY

Let me show how this problem of high background levels affects the country. As will be noted, these background levels for either one or the other of the two pollutants involved, often approach or exceed the NAAQS. This overlay shows areas in green which already come up to, or violate, the national standard for  $\text{SO}_2$  but not particulates. In other words, there can be no further development of industry or business which emit any  $\text{SO}_2$  in these areas. I can think of no industry that uses a fossil fuel in any of its operations, which does not emit quantities of  $\text{SO}_2$ —even with the most stringent pollution control devices intact.

There are many examples of areas which exceed the  $\text{SO}_2$  standards apparently as a result of background pollution. Some of these areas have been clearly identified. As our monitoring capabilities improve, and as more data is gathered, additional areas will undoubtedly be identified. Meanwhile, at least all of these areas marked in green are added to the list of nondevelopable areas.

#### THIRD OVERLAY

An even more startling circumstance is revealed by the next overlay, showing in red those areas which already meet or violate the national standards for particulates but not for  $\text{SO}_2$ . My colleagues know

that little if any industry exists in much of the West and Midwest. And yet this phenomenon occurs in rather large areas—take Alaska for example. Why? It is primarily due to natural causes. In Alaska and the Pacific Northwest, for example, much of this natural pollution results from salt spray in the air, which is picked up by the monitors as particulate matter. In other areas, the national particulate standard is violated by windblown dust from unpaved roads, fields, and desert areas. Now EPA realizes this problem. It is my understanding that they even approached members of the committee after the bill was reported. They wanted to permit development in these areas, even though the NAAQS for one of the pollutants was being violated.

I might add that the fact that vast areas of the country are in violation of the standard for one pollutant—and often because of natural causes—is not satisfactorily explained by the proponents of the committee bill. They argue that a nondeterioration policy will allow development in most of the country. The fact, however, is that many regions will have little or no increment to use, since the background level will itself exceed the required standard. Permissible development alluded to by the committee bill and guaranteed by the committee staff is seen once again to be nonexistent for many large regions of the country.

In the past, EPA has “winked” at provisions in the present act which do not permit construction of new major facilities in such areas if these facilities would prevent the area from attaining and maintaining the national standard. Since EPA knows—Edward J. Lillis and Dexter Young, U.S. Environmental Protection Agency, “EPA Looks at Fugitive Emission,” *Journal of Air Pollution Control Association*, vol. 25 No. 10, October 1975—that much of this pollution arises from natural sources, its regional offices occasionally permit a new plant—with proper emission control equipment, to be located in such areas. This discretion taken by EPA sets up a situation fraught with uncertainty for long-term business planning needs. Nothing could be more detrimental to our national economic recovery than this inordinate amount of EPA power to influence capital expenditure by the private sector.

It would be inaccurate to state that no development will occur in these areas marked red. However, if industrial development is to occur it must do so under two distinct and burdensome permit procedures. A would-be developer would have to obtain a variance from the State air quality authority to build a facility in any area which exceeds the NAAQS for particulates. However, since the same area is a nondeterioration region for purposes of the other pollutant covered by section 6, SO<sub>2</sub>, a separate permit would have to show that the facility would not exceed the allowable increment for SO<sub>2</sub>. This amounts to a dual permit procedure. Certainly would-be developers are thereby given a burden of proof which is nearly unattainable.

#### FOURTH OVERLAY

This fourth overlay is taken from EPA information which shows the mandatory class I areas required by this legislation. Though specific buffer zones are not per se established by the committee bill, it is clear that in and around class I area no major industrial source will be allowed. Though many areas with hilly terrain and adverse atmospheric

conditions will require much greater distances, the map shows the affect of citing restrictions of only 30 miles in radius.

Mr. Moss. In Senator Muskie's statement in the June 4 Record, he cited the National Academy of Science to show impacts from some pollutants at distances of 300 miles downwind. So, under section 6, a 30-mile buffer area is not at all unreasonable for purposes of illustration. All can see the additional areas that are removed from developable possibility by these class I designations which are mandatory. Others could be imposed if the State and the Federal land manager feel that it is necessary. And, of course, the buffer areas required may have to be considerably enlarged.

#### ADDITIONAL CONSIDERATION

One further concern has received very little attention to date, in spite of its far-reaching implications. Under the committee bill, Federal land managers having responsibility for administration of class I designated public lands have an affirmative responsibility to protect the air quality related values of that public land even when class I increments are not exceeded. This means that they are subject to discipline for failure to vigorously preserve nondeterioration in any such land that they administer, if such land has an air quality related value. Obviously, the bill reads as a mandate for erring in the direction of too much enforcement rather than too little. The potential for law suits is absolutely incredible. Presumably any one of a number of environmentally concerned group could bring legal action requiring the Federal land manager to himself take legal action against any would-be-developer if there is the possibility of air-related deterioration. Of course, that possibility always exists.

The only areas which are still available for any type of growth in the foreseeable future are those still showing up as white on the map. Even in these areas very little growth can be projected since background pollution and/or less-than-full increments for growth restrict development. And even in those areas not affected by class I, background levels, or partial increments, total allowable class II increments are still small enough to cause considerable doubt about how much, how fast, and when growth will occur.

The point that I have tried to make by presenting this map is to show that we use EPA's own data on the monitors that are in place in those air quality areas, to show that we have taken out already more than half, as much as two-thirds, of the land area of our country. And unfortunately the total area of red, stretching down through the middle part of the country and into the western part, is the area where we would expect to have some growth. This is an area of many natural resources, particularly a coal area, and the extraction of coal and utilization of coal is bound to cause some degree of pollution.

I think what this map tells us and what we ought to devote ourselves to here is that we need, indeed, to have a full-scale study on the impact of the policy set forth in section 6; and until we know the outcome of that study and until we are prepared to accept the tradeoffs, the impact that it would have, the restriction on growth and population in those areas, we should not enact section 6 into law.

My amendment, simply provides that section 6 shall not be enacted into law, and a study will be made by the Commission which is already set up in the act to do the study work, until that Commission has completed its study and brought back its report, so that Congress will not then be acting in an area where it is not fully informed.

I think one of the problems that we often get into in legislating is to see a desirable objective—and I say as loudly as anyone clean air is a desirable objective, pristine clean air, if it is obtainable—but we see a desirable objective and lock into law a requirement, without looking at the other considerations that are ours; and among the other considerations, of course, are to maintain a healthy economy, to preserve mobility and freedom for our people, and to make our lands and factories productive so that we can maintain an adequate standard of living for our people.

If we neglect those considerations, the people will not long keep us in Congress, I would think, because when the pinch begins to come, we, of course, would have to take the blame if we set in motion the condition that impinges on their livelihood and style of life.

Mr. RANDOLPH. The map shows large areas which currently violate primary and secondary standards, and would not be affected by the nondeterioration provision of the measure as reported from the Public Works Committee.

Mr. MOSS. It would affect the decisions, because in those areas no further deterioration would be permitted.

Mr. RANDOLPH. I suggest that perhaps the Senator's attention might better be directed toward the attainment of primary and secondary standards. What would be his response to that?

Mr. MOSS. As the situation is now, if the Moss amendments were adopted, of course, the standards that are already mandated in the law would remain in place, and this is something that I understand our colleague from Virginia is going to offer an amendment to; he would like to take away even the regulation standards that exist now. My amendment would permit those standards to remain in place, but it would say that section 6, which extends and even in some instances ameliorates slightly those present regulations, not be wired into law until we have completed this full 1-year study that is mandated in the amendment.

What I put the map up to illustrate is that, taking EPA data itself, admitting their monitors may cover very wide areas and there might be variations, yet these are the areas that are reported under these circumstances, and, taking EPA data, all of those colored areas, for one reason or another, either particulates or SO<sub>2</sub> or both, are presently up to or in violation of the permissible standards, and therefore, they cannot put any more increment in there.

The little dark areas are the ones that surround class I areas that are mandated.

There has been some discussion about the size of the buffer zone. I tried to address myself to that. That is simply illustrative and arbitrary, that a 30-mile buffer zone has been drawn around that. But it serves to illustrate that it stretches out over quite a few areas, since we have many national parks and monuments in the West, but it is noticeable even farther east and on the east coast—

Mr. RANDOLPH. There are no buffer zones provided for in the Senate bill.

Mr. Moss. That is right, there is none mandated. It is simply that nothing may be sited and put into effect that is going to impinge on the class I areas. So the buffer zone, if the wind were always prevailing, might be a mile, and you could depend on all of the pollution going away. But it has to be far enough away that twice a year it does not come into zone 1 and cause the pollution.

Mr. RANDOLPH. Because of what the Senator has just said, I think it is important to point out that there are pollution effects that occur from natural backgrounds.

Mr. Moss. That is correct.

Mr. RANDOLPH. As well as man-made sources of air pollution.

Mr. Moss. That is right. That is that big red area on the map.

Mr. RANDOLPH. The mention by the Senator of areas already in violation of national standards causes me to ask this question. Where this occurs the regions are classified as dirty areas, nonattainment areas under existing law. Is it true that such areas are not subject to the nondeterioration provisions of the bill?

Mr. Moss. I think section 6 extends to all areas if it is enacted.

Mr. RANDOLPH. The provisions of section 6 are restricted to clean areas or regions now in compliance with the national standards.

Mr. Moss. That there shall not be any additional pollutants, you mean, in those areas?

Mr. RANDOLPH. That is correct with respect to those areas not covered by section 6.

Mr. Moss. In those areas. Since these already exceed and exclude any additional development and section 6 would pertain to other areas, then we are simply out of business entirely.

Mr. RANDOLPH. Other parts of the bill apply to those areas in which primary and secondary standards have not been achieved; do they not?

Mr. Moss. Yes.

Mr. RANDOLPH. Yes.

Mr. Moss. The thing that seems to me that this so strikingly illustrates is that there are natural background pollutants, mostly particulates that exist in some areas. If we look at Alaska, most of Alaska is in red and we think of Alaska as being pristine, but if we measure it under the monitors they have there it falls in this category as being in excess of the permissible level.

Mr. RANDOLPH. I know that maps sometimes can portray the proposal of an advocate, and I can understand that is the Senator's purpose here. I am not saying that the maps are wholly inadequate and inaccurate. I will say however, that the committee bill requires States to submit lists of the portions of air quality control regions that are dirty and are, therefore, not eligible for the nondegradation policy. Since that process has not taken place, I wonder how maps can be made in an accurate way. In any case, the areas in such maps will be much reduced from the nonattainment maps that have been circulated. That is the reason I questioned the Senator about nonattainment.

I am not certain that we can have agreement on this. These maps do not argue against nondegradation; or do they?

Mr. Moss. I think they do.

Mr. RANDOLPH. I have simply this final observation: The maps, of course, only show the number of areas that are governed by policies more stringent than nondegradation. If an area is dirtier than the standards, then no new facilities may be allowed in the area unless assurance is gained that the new source will not cause or contribute to levels which exceed the standards. This would not be changed if the Senator's amendment passes, as I understand it. This is a question dealing with the attainment of those standards, as I first said, and not degradation.

Mr. MOSS. It seems to me that this illustrates, in part, some of the uncertainties we have here and probably underlines the reasons for the study that my amendment calls for.

I point out, in that I am concentrating on section 6. I think it should not be enacted until we have the full study.

As to the other parts of the bill, I am in favor of them. I believe we should have the emissions on automobiles dealt with, and other things that it does.

I have tried to make clear from the beginning that I do not oppose the bill as such. I have directed my attention only to section 6, which I want out until the study is complete.

Mr. BAKER. I rose to ask a few further questions about the map on the easel behind Senator Moss. Before I do, however, I was looking at the map, and I noticed it purports to be an amendment to section 6 of the Clean Air Act. I ask the Senator from Utah if that is a typographical error. I think it probably is an amendment to the committee bill, S. 3219. I could not find a section 6 of the Clean Air Act.

Mr. MOSS. I ask that the amendment be modified to refer to the committee bill and simply begin "is hereby deleted."

The modified amendment is as follows:

On page 11, beginning on line 9, delete section 6 and renumbering succeeding sections accordingly.

Section 37 is amended as follows:

On page 85, line 2, strike all through and including line 2 on page 89 and in lieu thereof insert the following:

SEC. 315. (a) There is established a National Commission on Air Quality which shall study and report to the Congress on—

(1) the effects of the implementation of any proposed or existing requirement on the States or the Federal Government under this Act to identify and protect from significant deterioration of air quality, areas which have existing air quality better than that specified under current national primary and secondary standards;

Mr. BAKER. I should like now to ask a few questions about the map.

The first question relates to the title on the nondeterioration map. The red areas on the map, if they are in fact supposed to be nondeterioration areas affected by the incremental requirements of the committee bill, do not seem to conform to the maps that we had in our committee in that respect. I wonder if there is some possibility that those red areas are something other than nondeterioration areas, pristine, pure areas, or areas cleaner than standards. Might they, in fact, be nonattainment areas instead of nondeterioration areas?

Mr. MOSS. Yes; I suppose they could be nonattainment, as a designation. These are areas which presently show, from the monitors, that they are up to or exceed the acceptable standard, and the red happens to be particulates.

Mr. BAKER. A lot of that may be background dust levels; may it not?

Mr. MOSS. Yes, a vast amount of it. I pointed out earlier that there is a great swath down through the mid part of the country and extending into the western part, and almost all of it is natural background particulates.

Mr. BAKER. So that the particulates probably already prevent, or so far have prevented, attainment of the primary and secondary standards, as distinguished from nondeterioration aspirations.

Mr. MOSS. Yes—on present standards.

Mr. BAKER. I ask the Senator from Utah what his understanding is, then, of the provisions of section 6 in those nonattainment areas. It was my impression, for example, that section 6 did not apply to nonattainment areas, only to nondeterioration areas.

Mr. MOSS. My understanding of it is that in these areas, we already are up to or exceed the standards. No additional increment would be allowed, no permit would be granted, or no more pollutants added in that area. Nonattainment is right, and it would cover vast areas of the country. Even some forest areas would come under this designation.

Mr. BAKER. As I understand it, then, it would amount to a contention—which may be right in many respects; I am not convinced that it is right in every respect—that nonattainment is the functional equivalent of nondeterioration in those cases, insofar as it affects future growth and development.

Mr. MOSS. Yes; I think that is essentially correct.

Mr. BAKER. With respect to the variations on that theme—and I will not move on to them now because they, too, no doubt, will be subject to controversy and attack—I ask the Senator if he has a map that shows the areas that are nonattainment areas and the others that are nondeterioration areas, so that we can make a distinction visually between the two classes of problems. Is there another overlay that goes with the map that might show that?

Mr. MOSS. No; I think the overlays are all down now, and we do not have any additional designations.

I might add that if I seem a little uncertain and this discussion is not as sharply drawn as it might be, it is probably a pretty good argument for having the study made that I want so much to have before we wire in section 6.

Mr. BAKER. That really gets to the nub of the matter and the point on which we disagree. There is no doubt in my mind, either, that we need a further study and, as the Senator knows, I was the one who introduced the amendment in committee to provide for the National Air Quality Commission, which has a similar undertaking—to study the whole range of air quality imperatives that ought to be translated into useful legislative language. I think the distinction, though, ought to be clearly drawn. It is the provision of the Moss amendment that the provisions of the act would be tolled or suspended pending the Senator's whole study.

Mr. MOSS. That is correct.

Mr. BAKER. It is the intent of the National Air Quality Commission, proposed in the bill, that the provisions of the act with respect to nondeterioration would go into effect on passage and not await a study.

Mr. MOSS. That is really the turning point, yes, whether or not it is suspended or tolled until the study is complete or whether it goes into effect and then the study is completed and may require some modification.

Mr. BAKER. There is an honest difference of opinion between us on that point.

Mr. Moss Yes.

Mr. BAKER. I contend, for instance, that the best interests of commerce and industry and the best interests of the country would be served by abrogating the EPA regulations, as the committee bill proposes to do, and to free us of the interpretation of the 1970 clean air amendment, and the approval of the EPA regulations, as the committee bill does, while the National Air Quality Commission goes forward with this examination. Is it not true that the Moss amendment would leave the EPA regulations and the implementing or approving court decisions in effect while the Moss study is going forward?

Mr. Moss. Yes, that is true. The status quo now would continue, which would mean the regulations would be in place and the court decisions that have been rendered would be half-way implemented.

Mr. BAKER. I notice that the Court of Appeals for the District of Columbia in the Sierra Club-Ruckelshaus case, I believe yesterday, affirmed an opinion by Judge J. Skelley Wright, the opinion of the district court upholding the reasonableness of the EPA regulations.

The argument, has been heard in the subcommittee that some of the people felt that the EPA regulations need not be abrogated by the statutes because of limitations on progress in effect. People have said we would rather take our chances on litigation than on legislation. Now, with the court of appeals upholding the district court, I guess the only thing left is the Supreme Court. I rather suspect that, in the case at hand, the court of appeals opinion would be a persuasive argument for the Supreme Court on the validity of the EPA regulations.

Is this not true: That the EPA regulations formulated in response to the district court decision would be much stricter in terms of restrictions on development, of nondeterioration of clean air in areas cleaner than the ambient primary or secondary standards; that those EPA regulations remaining in effect after the Moss amendment is adopted are tougher than the committee bills on nondeterioration? Is that not so?

Mr. Moss. I think that in some respects, yes, they are, but they are not as far reaching and do not finally wire in, the legal requirement until the study is completed.

Mr. BAKER. But the EPA regulations would be in effect while the study is going on.

Mr. Moss. That is true, they are. And they have a class III designation for industrial growth.

Mr. DOMENICI. I wonder if the Senator from Utah would tell me again what the red area of this map is supposed to tell the Senators?

Mr. Moss. The red area is the areas of the country where the monitors for these air designated zones recover particulates that equal or exceed those permissible.

Mr. DOMENICI. Permissible under what, I ask?

Mr. Moss. Permissible under present EPA regulation.

Mr. DOMENICI. Does the Senator mean that the red areas of this map are presently what we would call nonattainment areas?

Mr. Moss. I think that is what we agreed with the Senator from Tennessee to say, yes, a nonattainment area.

Mr. DOMENICI. Then the Senator is not saying that the nonattainment problem and the red areas of this map that indicate nonattainment are areas that would be impacted by a nondegradation policy; is he?

Mr. MOSS. If section 6 goes into effect, yes.

Mr. DOMENICI. I wonder why that is.

I understand these red areas from reading the map, basically, are as follows: They are areas of the United States, based upon present monitoring data, which exceed the primary and secondary standards of the county. That is for two reasons: First, because the manmade pollutants in the area have not been cleaned up or are excessive; second, where natural pollutants—that is, background particulates—when combined with industrial pollutants—violate the primary and secondary standards.

If that is what the red area does, then, the nondegradation policy, as articulated in this bill, has no application to those areas at this particular time, because they, in fact, are already in violation of the standards absent the nondegradation policy.

Nobody should believe that nondegradation is going to prevent growth in those red areas—good growth, bad growth, whatever kind of growth we are talking about—because, if they are presently nonattainment areas, growth is prohibited by the existing law of this land, not by nondegradation.

One of the major problems confronting this Congress and our Nation has nothing whatsoever to do with nondegradation, but, rather, how are we going to solve the problem of needed new growth in these nonattainment areas. There, we need to address two things: How much more can we clean up manmade pollution and what is the final policy of this Nation going to be with reference to background particulates.

I repeat: I do not believe any Senator should construe the red parts of that geographic map of the United States to mean that those are areas where the nondegradation policy of this committee, as articulated in this statute, prohibit growth. If growth is prohibited in those areas, that growth is prohibited by definition of the basic clean air statutes of this land and the nonattainment possibilities under the present regulations from both manmade and background particulates.

If I am right, then, in speaking of nondegradation, we are talking about the white areas, which are presently pristine areas—that is, areas where the air quality is better than that required by our primary and secondary standards. As a matter of fact, under your map, they end up being the only areas where real growth can occur.

That is the very thing this particular bill and our policy articulated in it direct attention at, and it is saying, if you want growth in those white areas, which are the only ones we are going to address under this particular section, then manage that growth so that you maximize diversified growth rather than permit one of those white areas to become red, and thus become a nonmaintenance area. That is the basic issue, and I think the map serves a very useful purpose.

So, contrary to the map serving the purpose of arousing some fear on this institution as to nondegradation, from this Senator's standpoint, it points up some completely different things, the most serious one of which is the question as to what is going to be the policy of this

country with reference to nonattainment—nothing to do with nondegradation—when nonattainment is based upon background particulates combined with manmade pollution in the air.

Mr. Moss. We are presently under EPA regulations which are administrative regulations. But if section 6 becomes law it can only be revised through a legislative process and, therefore, the questions that the Senator from New Mexico raises seem to me to argue for non-legislation on air standards until the study has been completed.

There are so many unknowns that we are trying to get the answers to: what it will mean, whether it is nondegradation or nonattainment, and we ought to know.

Now, trying to implement a law requiring clean air over this whole country is a large and complex undertaking, and we should not do it piecemeal, and we should not do it without the fullest study possible, with all the data that are possible for us to have before we make that judgment. That is the reason I feel very strongly on section 6.

Mr. ALLEN. If the Senator from Utah will yield me some time, I would like to discuss his amendment and support his amendment.

The heart of the debate regarding the proposed Clean Air Act amendments is joined today in consideration of the amendments to S. 3219 introduced by the distinguished Senator from Utah (Mr. Moss), amendments numbered 1598, 1599, and 1600, and they are to be voted on en bloc.

The Moss amendment goes to the very heart of this issue, and this issue is: should section 6, the nondegradation provision of the Clean Air Act amendments be enacted into law prior to a study as to the necessity and advisability of the provisions set forth in section 6. It is the practical approach to the problem.

The sponsors of the bill contend that the EPA already has the powers that are contained in section 6 and that, in fact, section 6 is a limitation on the powers that EPA now has.

If that is true, there is no need whatsoever for the enactment of section 6 until such time as a study has been made to consider the procedure and the formulas provided by section 6, because EPA already has the basic power, according to the proponents of the bill, and that, in fact, section 6 is a limitation upon those powers.

So what is there to lose, by the adoption of the Moss amendment?

It would provide for the study by a Commission which would report back and the Congress would have the benefit of the recommendations of that commission as it studies the necessity of making a nondegradation provision.

The first amendment contained in the Moss amendment would strike the significant deterioration provisions of S. 3219; the second would require a report to Congress within 1 year regarding nondegradation policy; and the third amendment requires the National Air Quality Commission established by S. 3219 to study economic and energy effects of the present national ambient air quality standards and the policy of prohibiting deterioration of air quality. I shall address myself to the Moss amendments en bloc, because all of them will be voted on as one amendment.

There is more at stake here than clean air versus dirty air—I suppose all of us would opt for clean air rather than dirty air—environmentalists versus industrialists, health versus economics; what is at

stake is the contemplation of a vast reordering of the way in which we think about the future shape of our society. For, surely, if many of the concepts embodied in S. 3219 are enacted without substantial change, we will move the country in a direction that I am not at all sure the average citizen wishes to be moved. More important, we could so move the country in a direction which might not be supported by the population-at-large once the full impact and scope of legislation is made clear to the public by radical changes in living standards brought about by strict compliance by companies who now provide the bulk of the jobs our citizens have.

The Clean Air Act of 1970 requires that Federal standards for air quality be set to protect health and welfare—crops, property, wildlife, and so forth. The States were given the power to control industrial and commercial development within these health and welfare standards and also were given the option of choosing stricter controls for new or old facilities. In addition, new facility construction and modification of existing facilities are required to meet uniform Federal performance standards by use of the best available demonstrated control technology and can be prohibited entirely if it is determined that such construction or modification would interfere with meeting air quality standards.

Thus, the current act presents a balanced program: controls in areas where existing air quality could possibly be harming health and welfare; uniform Federal controls on new installations to assure that the best controls will be used; and provisions for the States to adopt stricter standards if desired.

#### THE "NONDETERIORATION" CONCEPT

The "nondeterioration" concept came about through court interpretation of the words "protect and enhance" contained in the 1970 act. The Supreme Court, in a four-to-four decision—hardly an overwhelming number, four-to-four, but they did uphold the lower court because it would have taken a majority, to overrule the lower court—upheld a lower court ruling that the air could not be degraded even if the air quality remained within the health and welfare protective standards.

The Environmental Protection Agency accordingly promulgated regulations for the "prevention of significant deterioration." These regulations now govern development—industrial, commercial, institutional—in clean air areas—those areas already meeting the health and welfare standards.

The nondeterioration section of the proposed Clean Air Act amendments now pending in S. 3219 is the result of the EPA's request to Congress for clarification of the intent of the words "protect and enhance." The administration and most industrial groups contend that Congress did not intend the Federal Government to play any role beyond the protection of health and welfare and that the States, not the Federal Government, should have the authority to choose stricter standards.

I should like to point out specifically that the opposition to the nondeterioration section of S. 3219 is not limited to "industrial groups" and the administration. Last week, when this debate began, I received a brief paper of quotes from the Washington Environmental Coordi-

nating Committee which, on its front page, prominently quotes Mr. Robert A. Georgine, president of the Building and Construction Trades Department of the AFL-CIO, to wit:

The issue and its consequences are far too important to be brushed aside in the haste to legislate.

Thus, supporting the concept of the Moss amendment which would study and then legislate, rather than legislate and then study.

The paper is a compilation of remarks by various individuals, in and out of the Government, on the serious potential impact of the passage of the "no significant deterioration" section of S. 3219.

Mr. ALLEN. There has also been considerable comment that only the "big" companies and the "big" utilities are fighting section 6 of the bill. Nothing could be further from the truth if the mail I have received on this issue is any indication. I should like to quote the mail-gram I received yesterday from the National Rural Electric Cooperative Association. It supports my thesis that opposition to section 6 cuts across all the usual coalitions and groupings we are used to hearing from involving very controversial legislation.

The National Rural Electric Cooperative Association is an association of some 1,000 rural electric cooperatives all over the country in every State, if not very nearly every State.

The National Rural Electric Cooperative Association strongly supports the Moss Amendments Nos. 1598, 1599, and 1600 to S. 3219, the Clean Air Amendments of 1976.

NRECA believes that the impact of S. 3219 on the national economy and the formation of growth capital has not been adequately evaluated. The Environmental Protection Agency recently analyzed current macro-economic studies and concluded "hence, one cannot put much faith in the internal consistency or the findings of any of these studies." In view of this uncertainty NRECA urges that you support the Moss Amendments when they are brought to the floor.

The Alabama Power Co. provided me with a fact sheet on that firm's reaction to the proposed additions to the Clean Air Act of 1970. I wish to excerpt from that statement one small portion because it deals with a map—showing the potential impact of pending legislation on the service area of the firm, which is some five-sixths of the State of Alabama, the remaining portion of the State being served by the TVA.

That portion of his statement reads:

Attached is a map of the State of Alabama which indicates that the only part of the State where nondeterioration provisions would not apply are small areas in the Tennessee Valley. All of Alabama Power Company's service area would be affected by the provisions. Even if it is assumed that all of the State's area is classified as Class II, the allowable increments of SO<sub>2</sub> and particulate concentration are so small as to produce severe restriction on power plant siting in hilly terrain and, in any event, to act to restrict the size of power plants or other particulate or SO<sub>2</sub> emitting industries sited in a particular area.

Mr. ALLEN. One of Alabama's significant industries, which employs 5,000 people across the State, reported to me that in 1975, the company spent more for pollution control equipment than to sustain the existing manufacturing equipment; that, as of August 1975, the company spent, in Alabama alone, \$16,800,000 for air pollution only; and as of that same date, the company spent a total of \$22,114,000 for air quality compliance and an additional \$5,851,000 for water quality for all the installations of the company across the United States. This, to me, represents an enlightened and progressive firm, but they do

object to the provisions of S. 3219 calling for heavier and heavier monetary commitments to cleaning up air in the areas of their operations until "the full impact on our society can be ascertained by a full study by the National Air Quality Commission." That firm already knows what the impact of the current law is—they ask, and rightly so—that further economic impact be based on sound data. I submit that that firm is not asking too much of the U.S. Senate.

#### S. 3219, THE STATES, AND LAND USE

The legislation would require that State plans submitted to the Environmental Protection Agency contain a section providing for "prevention of significant deterioration" in conformity with strict Federal guidelines. These guidelines would dictate that the State designate areas where air is already cleaner than the health and welfare standards as either class I—"pristine" areas such as national parks, where only very small pollutant increases may be permitted—or class II—areas suitable for limited, tightly controlled growth. For each class, the committee's proposal sets forth the amounts, or increments, of pollutant concentration increases that can be allowed and requires that the State environmental agency assure that these increments over baseline concentrations—the levels of each pollutant as of July 1, 1976—are not exceeded. Unfortunately, these increments have been arbitrarily set as fractions of the present air quality standards and, as a consequence, bear no reasoned relationship to the aesthetic qualities above and beyond the health and welfare standards.

In order to obtain a permit to construct an industrial source or to expand an existing source in an area where nondeterioration language would apply, an applicant would first have to meet all preconstruction review requirements under existing law, including the complete statements of all environmental impacts under the Federal Water Pollution Control Act and any State or local environmental regulations.

Under the provisions of section 6 of S. 3219, the nondeterioration section, the applicant would also have to monitor ambient air quality for a period of a year and perform mathematical modeling to predict increases in pollutant concentrations to determine the effect on air quality the source would have. After this extensive review has been completed, the applicant would present his data to the State agency implementing the nondeterioration regulations. He would have to prove that his source could be constructed causing no threat of violation to allowable increases in pollutant concentration—the increments. If he proposes to locate close to a class I area, he would not only be required to show that he could meet the increments where he planned to site but also that the source's emissions would not pose a potential threat of adverse effect on the pristine area through intrusion.

Even if the applicant were able to prove all these things—assuming of course that the applicant could afford to conduct such testing, and so forth—the national nondeterioration proposal would grant the State agency the discretion to make a political land use decision to grant or deny the permit. With a very limited increment to mete out, the agency would choose how, or if, the increment should be spent. It would decide what could be built, and when, even when the applicant could show that the new source would comply with the strict require-

ments of the act. This, is the backdoor approach to Federal land use planning, and it is especially obnoxious since the Congress has rejected land use planning at the Federal level in each of the last 4 years. Land use planning should never be mandated on the basis of one single factor such as "air quality," and premised on incremental increases which bear no relationship to the values they are designed to protect. Such severe limitations on the economic growth of our country should not be imposed on so narrow and arbitrary a basis.

#### WHY I OPPOSE THE NONDETERIORATION SECTION OF THE BILL, S. 3219

Proponents of nondeterioration feel that it is necessary to protect air that is cleaner than health and welfare standards where large, unique Federal lands are located. However, after a year of study by the subcommittee and the full committee, and after many noncongressional inputs have been received, it is dawning on many of us that the legislation has far graver impacts on industrial growth than previously contemplated. So far, the information generated in support of the nondeterioration standards have raised more questions than have answers been provided.

There is also a very significant fact that has been generally overlooked by the proponents: the nondeterioration concept results in part from the fact that only one major industry—the electric utility industry—has been studied in any depth as to the potential impacts of the "no significant deterioration" proposal. Where is the supporting data regarding the steel industry, shipbuilding, foundries, petrochemicals, refineries, the whole agricultural sector, and so forth? In fact, no thorough technical analysis has been performed to study the effects of the committee proposal on any of these industries.

Additionally, the increments which define "no significant deterioration" were arbitrarily picked by the Environmental Protection Agency and bear no identifiable relationship to the qualities they are supposed to protect in the unique land areas. It would be ill-advised to trigger the enormous planning processes to be required of States, not to mention the tremendous expense of economic and technical modeling and duplicative emission control technologies that would be required of industrial sources, to establish and enforce these increments without first undertaking research to determine what levels make an esthetic difference in the various areas.

Furthermore, few States have examined the impact of a national nondeterioration policy on their ability to determine their economic future, and no State has been asked to testify either in support of or in opposition to the concepts in the proposal although there have been statements, for and against, from various State officials. The authority of the States to plan industrial development within the boundaries of public health and welfare or to opt for development within stricter standards of emission reduction is reaffirmed in section 116 of the existing Clean Air Act. This authority would clearly be reduced to a significant degree if the bill, S. 3219, were enacted.

To implement the goal of limiting construction in areas cleaner than health and welfare standards, the nondeterioration proposal would grant the State environmental agency the discretion to make land use decisions to grant or deny a permit to construct an industrial source or to expand an existing source based on compliance with

Federal air increments. The States' authority, however, would be greatly reduced no matter how much flexibility is reserved for them.

I feel that the land use policy decision inherent in the nondegradation concept should be made by the local governing body in the area directly affected by such a decision. It is the States, counties or municipalities which are best able to evaluate the needs of the community and determine whether they care to forgo new industrial development for the sake of preserving air far beyond any health-related standard. The Clean Air Act provides the States with ample authority to prevent the construction of any installation which would violate stricter standards they might wish to maintain.

It is my contention that land use planning should never be mandated on the basis of one single factor, nor premised on incremental increases which bear no relationship to the values they are meant to protect. Such severe limitations on development and the economic growth of our country should not be imposed on so narrow and arbitrary a basis.

I do not believe, that the U.S. Senate should go on record as approving a policy that will potentially adversely impact future generations without first learning all there is humanly possible to know about the implications of the proposed policy. The Moss amendments provide for the kind of study and time for consideration of the ramifications of their findings, for the Congress to make a more reasoned judgment in the next year or two.

I may be considered an obstructionist for saying that we should proceed with caution on the subject of national ambient air standards, but so be it. I know the people of Alabama are committed to the concept of clean air, of improving air quality, and we do not take lightly our responsibility to provide for the general welfare and the improvement of the general health of our citizens. I do say, however, that individual Alabamians have contacted me in large numbers to request that economic growth in the State not be stymied by the Federal Government, nor that jobs not be lost because of Federal redtape, nor that we bring or impose more Washington decisionmaking into the decision-making processes of our local governmental units.

The proposed legislation can be viewed as a refinement of the new power of super-bureaucrats to have long-term impact without the citizens feeling it directly. The subtlety of S. 3219 is that its provisions, if enacted, would not be felt all at once by the citizens.

I am not at all convinced that we must take the extra step to clean up our air quality that is proposed by this measure, but I think it is fair to ask the Congress and the Senate in particular, to study all the ramifications of the proposed policy before attempting to implement that which most citizens do not understand.

#### EXHIBIT 1

#### NO SIGNIFICANT DETERIORATION

#### IMPACT ON AIR QUALITY AND HUMAN HEALTH

#### U.S. Environmental Protection Agency:

"... there are very strong regulatory measures in existence to prevent deterioration of air quality in regions where the national standards are currently exceeded. Strong regulatory measures also exist to insure that air quality in currently clean areas cannot deteriorate sufficiently to subject the public health or welfare to any currently quantifiable adverse effects."

U.S. Office of Management and Budget:

"(The non-deterioration proposals offer) no benefit relative to EPA's health standards, but will result in significant economic costs."

U.S. Federal Energy Administration:

"(No significant deterioration) sounds great, but it is not aimed at protecting human health. It is aimed at the aesthetic side of the environmental equation—whether or not the air looks clean . . . If you carry nonsignificant deterioration to its logical end, the West will stay clean and the East will get dirtier."

U.S. Department of Health, Education, and Welfare:

"According to EPA, the only documentable benefits to be achieved by non-deterioration regulations could be 'aesthetic, scenic and recreational.'"

National Economic Research Association:

" . . . these new (no significant deterioration) amendments will have their primary impact in areas in which population density is quite low and in which air quality is already quite good. Consequently, it is unlikely that the benefits from these amendments will be as great as (those) achieving from meeting (present standards) . . . even if the same level of benefit could be achieved, the cost benefit ratio for (the significant deterioration) amendments would be 34 to one."

Lafe Pomerance, Legislative coordinator, National Clean Air Coalition:

"All the (significant deterioration) bill does is to protect national parks, assures that new growth is as clean as possible and prevents the air from being equally dirty around the country."

#### IMPACT ON PEOPLE

U.S. Department of Housing and Urban Development:

" . . . the adoption of any of the (significant deterioration) plans would result in the virtual cessation of community development activities . . . to provide for the future increase in population . . . the proposed rule would result in an intolerable situation—more people, but no place for them to reside."

U.S. Department of Health, Education, and Welfare:

"While non-deterioration regulations risk imposing substantial net costs on the nation as a whole, a disproportionate share of these costs might be borne by persons of limited economic means and residential mobility. These persons would benefit relatively little from the preservation of air quality in rural areas, while they would disproportionately bear any impacts of curtailed economic growth, altered urban and rural development trends, constrained national capacity to absorb anticipated population increases, and higher consumer prices for energy and manufactured goods."

#### IMPACT ON THE ECONOMY

U.S. Environmental Protection Agency:

" . . . the Senate significant deterioration proposal will not prevent the construction of major industrial facilities. However, (it) may require some facilities to employ different air pollution control measures, such as further control of sulfur dioxide emissions, construction of taller stacks or smaller plants, relocation at alternative sites with more favorable terrain conditions, etc. While the use of such control strategies will impose additional costs on consumers, these additional expenditures must be balanced against the benefit that would result from preventing the degradation of air quality up to the National (Health and Welfare) Ambient Air Quality Standards."

U.S. Department of Labor:

" . . . we cannot find an adequate basis for agreeing with the statement . . . that 'this (proposed significant deterioration) section protects clean air areas from deteriorating while permitting the economic development necessary to achieve a steady improvement in our standard of living.'"

U.S. Department of Health, Education, and Welfare:

"If non-deterioration regulations do not allow for a sizeable margin of growth, the adverse impacts might be profound. Even with a declining birth rate, this country's population is expected to increase by some 60 million persons (30%) in the next thirty years. Without a 30% growth in economic production during the same period, we would suffer an absolute decline in per-capita income."

Governor Arch A. Moore, Jr. (R-W. Va.):

"It is my considered judgment and my deep concern, that if the (significant deterioration) proposals . . . are enacted into law, the effect upon this nation's already troubled economy could be disastrous."

## IMPACT ON LAND USE AND GROWTH

U.S. Environmental Protection Agency:

"EPA's and other analyses indicate that the (proposed) Senate Class II increment would allow projected economic growth in most urbanizing areas to 1980. However, these studies show (that changes) would be necessary in order to avoid significant restriction and/or altered development patterns by 1990."

U.S. Council on Environmental Quality:

"Significant deterioration regulations . . . are so closely tied to land use issues . . . Under one of the (Senate) alternatives . . . the class (III area) permitting the highest pollution level would be eliminated. This approach might mean that industry would have to disperse, not necessarily the best solution from a land use prospect"

Wallace H. Johnson, former Assistant Attorney General, Land and Resources Division, U.S. Department of Justice:

"A consequence of thus freezing at their current levels of development these 'cleaner than clean' areas might be the confining of industry and population to those areas of the country which are now 'dirty air' areas."

Bureau of Domestic Commerce, U.S. Department of Commerce:

". . . in (EPA's) Class I and Class II area designations the allowable degradation increments would not permit some industries to grow sufficiently to meet local and national requirements and objectives. This would be particularly true in the essential fields of natural resources processing and energy production."

U.S. Department of Health, Education, and Welfare:

"Non-deterioration regulations would produce a national land-use policy giving singular attention to air quality criteria. Serious land-use distortion might result, particularly if only a few regions would be capable of absorbing population or economic growth."

The Sierra Club:

"If the best technological developments are utilized and if numerous pollution producing sources are not concentrated in one place, most industry can enter clean areas without causing significant deterioration."

The Indianapolis (Indiana) News:

"(The House significant deterioration legislation) would achieve what has been the clear goal of EPA since its creation—complete control over the land-use decisions and economic development. It would be disastrous for the economic future of the United States to be in the hands of bureaucrats who basically do not believe in the future."

U.S. Environmental Protection Agency:

"Many areas of the country have virtually no man-made emissions. To establish a policy that new emissions can only be introduced to the extent that current emissions are reduced would forever relegate these areas to an essentially undeveloped status. This . . . would, in turn, require that new pollution sources be located only in the semi-urban and urban areas of the country."

Governor Raul H. Castro (D-Arizona):

". . . adequate consideration has not been given to the effects of land ownership patterns and the potential diversities in land management philosophies in the implementation of the (significant deterioration) amendments. . . . Consequently, the economic development of this state could be unduly determined at the federal level."

Governor Mills E. Godwin, Jr. (R-Virginia):

"If this (significant deterioration) legislation is enacted in its present form, Virginia would feel impelled to ask the courts to set it aside as unconstitutional. Once, the full impact for disruption of orderly, comprehensive land use planning of these sweeping proposals is comprehended by other states, I believe a substantial number of them will be joining the effort."

## IMPACT ON ENERGY RESOURCES

Thomas S. Kleppe, Secretary, U.S. Department of the Interior:

"These Clean Air Act amendments could put us out of business in western coal. I think that the present Congress could make it impossible to utilize our coal resources in the West and that concerns me."

Consulting Geologists, Kent State University:

In a study of the impact of significant deterioration regulations on the 11 states with major portions of the nation's coal, oil shale and uranium resources, Kent

State geologists concluded that: (1) new processing of approximately 98 percent of Kentucky's coal reserves could be prohibited; (2) West Virginia could suffer inhibitions affecting more than 86 percent of its coal areas; and (3) mineral fuel resources—coal, oil shale and uranium—of Montana, Wyoming, Colorado and Utah would be affected by land areas needed to protect adjacent federal lands.

Senator Frank E. Moss (D-Utah):

"State and local governments and major industrial concerns in the country are justifiably alarmed about the full impact this (significant deterioration) legislation will have, for though the data available is too incomplete to list 'which' areas will be affected 'what' way, there is at least general agreement that the new policy will drastically curtail industrial expansion in the majority of the states, and especially in those energy resource states . . . which are being called upon to meet the goal of energy independence . . ."

#### IMPACT ON CONSUMER ELECTRIC BILLS

U.S. Environmental Protection Agency:

"It is expected that the major impact of the Senate (significant deterioration) proposal will be on the electric utility industry . . . the Senate proposal will also increase average residential customers yearly expenditures in 1990 by a maximum of \$28 per year. This is equivalent to an increase of slightly more than 2%."

The General Electric Company:

"The average cost of electric energy in 1990 could be as high as 10¢ (per) kilowatt hour as a result of meeting the proposed amendments." (Note: The 1975 average cost of electricity is 2.70 cents per kilowatt hour.)

National Economic Research Associates:

"In the absence of currently proposed amendments, the Clean Air Act for the electric utility industry will cost each American household \$1,500 between 1975 and 1990. Amendments proposed in S. 3219 are estimated to add \$299 per household to these costs but . . . as high as \$673 per household if more extreme interpretations of the legislation are accurate and if electricity demand grows at the high end of the projected range."

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#### EXHIBIT 2

ALABAMA POWER CO.,  
Birmingham, Ala., March 29, 1976.

HON. JAMES B. ALLEN,  
United States Senator, Dirksen Senate Office Building, Washington, D.C.

DEAR SENATOR ALLEN: As you may be aware, on April 5 the Senate Public Works Committee will take to the floor of the Senate the amendments to the Clean Air Act.

Several weeks ago, Mr. Joe Farley sent to you copies of a newspaper article appearing in the Los Angeles Times, as well as other large daily newspapers, pertaining to a report by the Task Force Committee within the Environmental Protection Agency assigned to study the harmful effects of sulfur dioxide emissions. According to the newspaper article, there was some disagreement between members of this committee as to the validity of the findings in the final draft regarding the effects of sulfur dioxide on the public health and welfare.

Several members of Congress have requested immediate Congressional hearings in order to get the true facts and an accurate accounting of the findings of the Task Force Committee as quoted in the article.

Enclosed is an analysis of Alabama Power Company's position as to how these amendments to the Clean Air Act by Senator Muskie's committee will adversely affect Alabama Power Company, its customers, and the State of Alabama. We would certainly hope that you will support the Congressional hearings to review the EPA report and that you will further bear in mind our opposition to the pending amendments before casting your vote on this important matter when it comes before the Senate.

Sincerely,

JOHN H. HAWKINS, JR.,  
Assistant to Senior Vice President.

## CLEAN AIR ACT AMENDMENTS

## INTRODUCTION

The Clean Air Amendments that will be reported out of the Senate Public Works Committee contain provisions for the prevention of "Significant Deterioration" of air quality and requiring use of best available control technology (BACT) in the construction of new major emitting facilities. These provisions, taken together, assure that major incremental costs—over and above those expended under the present Act—will be incurred by the Nation as a whole. The existing Clean Air Act assures adequate health and welfare protection, and these costs will provide no additional benefits for the Nation. Effects which would be associated with the "Significant Deterioration"—BACT provisions include significant increases in the consumer's electricity bill and major hindrances in the siting and construction of needed new bulk power facilities. "Environmental Control" provisions which return no quantifiable benefits to the citizenry of this Nation, while at the same time requiring large expenditures of funds, are reprehensible under the best of circumstances. During times like the present, when the energy production and financial resources of the Nation are being strained to near the breaking point, passage of such legislation by the Congress may be interpreted by the American people, when they understand the full impact of its provisions, as a betrayal of trust.

PROVISIONS OF SENATE BILL IN REGARD TO SIGNIFICANT DETERIORATION  
AND BACT

The Senate Bill provides for the division of the country's land area into Class I and Class II areas. Increments of air pollutants allowed in the highly protected Class I area are so small that both Environmental Protection Agency-Federal Energy Administration and utility industry studies show that major power plant sites within such areas will be essentially impractical. The Senate Bill provides for the mandatory designation of all international parks and all national parks and national wilderness areas greater than 5,000 acres as Class I. Larger increments of pollutants are allowed in the Class II areas but, even there, increases are limited to only a fraction of existing ambient air standards which were set for the protection of public health and welfare.

The best available control technology (BACT) provisions of the proposed Senate Amendments provide for case-by-case determinations of what is achievable for a particular facility through the application of production processes and available methods, systems and techniques, including fuel cleaning or treatment, for control of each pollutant. In addition, the bill provides that in no event will the emissions associated with such best available control technology exceed that provided by the New Source Performance Standards section of the existing Clean Air Act. Thus, the practical effect of the best available control technology provision of the proposed amendments is to negate and supersede the existing New Source Performance Standards of the Clean Air Act of 1970.

## COMPARABLE PROVISIONS OF THE PRESENT CLEAN AIR ACT

The present Clean Air Act provides no consideration of "Significant Deterioration." By contrast, protection of the public health and welfare is to be assured through attainment and maintenance of ambient air quality standards. The primary standards are set to protect health with an adequate margin of safety. The secondary standard is that level of pollutants determined by the Environmental Protection Agency as being the concentration necessary for the protection of public welfare from any known or anticipated adverse effects. That adequate protection is afforded by this provision is apparent from the explanatory definition contained in Section 302(h) that "language referring to effects on welfare includes, but is not limited to effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility and climate, damage to and deterioration of property and hazards to transportation as well as effects on economic values and on personal comfort and well being." Because of the all-inclusive nature of this language, it is quite clear that a properly set secondary standard is a threshold level for public welfare effects and that no quantifiable benefits are possible at concentration levels below the secondary standard. Since all regulation under the proposed Significant Deterioration amendments treats pollutant concentrations at levels lower than the secondary ambient air stand-

ards, it follows directly that this legislation can provide no quantifiable benefits to public health or welfare.

Section 111 of the 1970 Clean Air Act, "Standards of Performance for New Stationary Sources," provides that the term "Standards of Performance means a standard for emissions of air pollutants which reflect the degree of emission limitations achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction) the Administrator determines has been adequately demonstrated." Since the Senate Bill sets the minimum level of "best available control technology" equal to the existing Standards of Performance for New Stationary Sources, it is certain that such additional limitation as might be determined on a case-by-case basis as required by the Senate Bill will incur substantial extra costs in providing emission limitations beyond the "best system of emission reduction" already represented by the Standards of Performance for New Stationary Sources.

#### EFFECTS OF SENATE AMENDMENTS

A December 1975 EPA-FEA study determined the capital cost of the Significant Deterioration provisions to be greater than \$11 billion between 1975 and 1990. These estimates agree well with those made by the electric utility industry which estimated 1975 to 1990 costs in a range from \$9.45 to \$13.19 billion. Industry studies have further broken down this expected cost to a per-customer basis. These estimates indicate that the national average household cost of the significant deterioration-BACT provisions \$40-\$60 per year in 1975 dollars by 1990. Since there are nationwide averages, a state such as Alabama which relies very heavily on coal as a fossil fuel would incur costs to the customer significantly above these nationwide averages. These costs are to be borne by the consumer with no promise at all of *any* quantifiable benefits, not to speak of commensurate benefits.

The land use effects of the Significant Deterioration provisions are likewise striking. The significant deterioration provision of the Senate Bill would apply in all areas where present air quality meets national secondary standards for either sulfur dioxide or particulates, or both. Attached is a map of the State of Alabama which indicates that the only part of the State where nondeterioration provisions would not apply are small areas in the Tennessee Valley. All of Alabama Power Company's service area would be affected by the provisions. Even if it is assumed that all of the State's area is classified as Class II, the allowable increment of SO<sub>2</sub> and particulate concentration are so small as to produce severe restriction on power plant siting in hilly terrain and, in any event, to act to restrict the size of power plants or other particulate or SO<sub>2</sub> emitting industries sited in a particular area.

#### SUMMARY

Without exaggeration and without equivocation, it is clear that the restrictions on power plant and industrial siting and the huge costs which will result from passage of the Senate Bill would have major detrimental economic effects on the citizens of the country. Further, it is absolutely true that the economic costs will not be counterbalanced by commensurate environmental benefits; in fact, there will be no measurable environmental benefits, because health and welfare protection already are provided in accordance with the 1970 Clean Air Amendments. Because of this protection against detrimental effects provided by the existing Clean Air Act, the Senate Amendments should be amended to explicitly affirm that attainment of Primary and Secondary Ambient Air Quality Standards is sufficient to prevent "Significant Deterioration."

If land-use legislation is to be passed, then it should be done under bills so labeled. To pass the wolf of oppressive and insensitive land-use legislation by disguising it in the sheep clothing of clean air protection would be the most irresponsible possible legislative action and would be certain to impose large unproductive costs on the citizens of our State and of our country. To prevent the imposition of these unproductive costs on an already heavily burdened economy, the "Significant Deterioration" and BACT provisions must be stricken from the Senate Bill.

#### UP AMENDMENT NO. 291

The Senator from Virginia (Mr. William L. Scott) proposes an unprinted amendment No. 291 to the Moss unprinted amendment No. 290:

On page 1, line 1 after the word "and" insert the following:

"SEC. 6. During the period of the study authorized by section 315 of the Clean Air Act, nothing in such Act shall be construed to require or provide for the establishment of Federal standards more stringent than primary and secondary air quality standards:". and strike line 2.

MR. WILLIAM L. SCOTT. It is my understanding that there is no substantial change either in the substance of the amendment by the Senator from Utah or in the amendment that I have just offered.

I also understand that the amendment offered by the Senator from Utah (Mr. Moss) would strike section 6 of the committee bill and would provide for a study. However, the nondegradation policy of the Environmental Protection Agency, and the regulations of the EPA which were established subsequent to the District of Columbia court decision in *Sierra Club versus Ruckelshaus*, would remain in effect.

It appears to me that if these regulations remain in effect, the amendment by the Senator from Utah actually is a nullity. It does not accomplish anything because the regulations remain in effect. The Environmental Protection Agency is acting at the present time and will continue to act, unless we have some statutory law to prevent its action to go along with the whole concept of nondeterioration.

There was a case yesterday before the Court of Appeals of the District of Columbia which reaffirms the principle of the *Sierra Club* case. Eleven cases were combined. The opinion of the court is 54 pages in length.

On pages 53 and 54 of the decision by a three-judge panel, the court concludes:

We find no ground on which to disturb the regulations upon review, and we therefore affirm the EPA prevention of significant air quality deterioration regulations. Our review of *Sierra Club versus Ruckelshaus* and subsequent events have revealed no substantial reason for rejection of that decision, and we hold that the nondeterioration regulations promulgated pursuant to that decision are both rational and in accordance with law.

The original decision in *Sierra Club* against *Ruckelshaus* in 1972 arose from the District Court of the United States for the District of Columbia, the very same court that heard these combined cases on which the court of appeals ruled yesterday. In the original *Sierra Club* case, the Supreme Court of the United States sustained the court of appeals by a 4-to-4 decision. But Mr. Justice Powell did not participate in that decision, and Mr. Justice Stevens has since become a member of the Court with the retirement of Mr. Justice Douglas. Therefore, even though the case was sustained by a 4-to-4 decision, it taking a majority to reverse the court of appeals, that could very well happen to these cases when they come to the Supreme Court of the United States. There is no certainty that the cases decided yesterday will be permitted to stand.

In my opinion, the matter of policy regarding the balancing between air quality and economic well-being in our Nation should be decided by Congress and not by the courts or by administrative regulations. Yesterday's decision emphasizes the necessity for and I think gives greater impetus to the amendment that I have just offered for the consideration of the Senate, and the need to suspend the operation of the regulations during the period of the study provided in section 315 and in the Moss amendment.

My amendment simply provides that during the period of the study nothing in the Clean Air Act shall be construed to require the estab-

lishment of Federal standards more stringent than the primary and secondary air quality standards. The Administrator of EPA now has the authority to change the national primary and secondary air quality standards. He can raise or he can lower these nationwide air quality standards when he considers it to be in the public interest to make an adjustment in them. However, with nondegradation, his standards would have to be nationwide in their effect.

I believe that there is a probability that the Supreme Court will grant certiorari and will reverse this court of appeals case. There is a substantial Federal question involved in this matter. But Congress should not shirk its legislative and policymaking responsibilities.

Without my amendment, the Moss amendment leaves the decision up to the Government agencies and to the courts.

Mr. FANNIN. Are we debating just the concept of significant deterioration? Are we not also debating the ability of section 6 to get the job done? Is that not correct, I ask the Senator?

Mr. WILLIAM L. SCOTT. Yes. I think what we are attempting to do is to permit the Administrator of the Environmental Protection Agency to continue to set air quality standards nationwide.

Mr. FANNIN. Yes.

Mr. WILLIAM L. SCOTT. With a quality high enough to protect the health and welfare of our citizens, but to preserve to the States the right to establish even higher air quality standards.

Mr. FANNIN. Yes. Is it not true that the present EPA regulations have been granted land-use classifications with three classes of allowed growth?

Mr. WILLIAM L. SCOTT. Yes. In this case that was decided yesterday. That was approved.

I have serious questions about it. We have three classes, and the Court, on page 13 of its opinion, says that class I applies to areas which practically any change in air quality would be considered significant.

I am talking about the pristine areas, the national parks and national wilderness areas.

Mr. FANNIN. Yes.

Mr. WILLIAM L. SCOTT. We could not build a plant anywhere near such areas that would in any way deteriorate the air quality. That means in my State, in the valley of Virginia, for example, the EPA might not allow construction of certain facilities because of the close proximity of the Shenandoah National Park, and I think this is ridiculous and ill-advised.

Mr. FANNIN. That is ridiculous, and that would occur in many States of the Nation. The State I represent would certainly be involved.

Does my colleague agree that under the increments of this act, growth would actually be encouraged? On page 22 of the committee report, we have a chart entitled, "Ambient Air Quality Standards and No Significant Deterioration Increments, in Micrograms Per Cubic Meter," which shows a maximum annual increment on particulate matter in class I as 5 micrograms and in class II as 10.

Does my colleague agree that under the increments in this act, growth would be greatly encouraged as each industry sought its share of the allowed pollution?

In other words, would they not all be rushing out to build their plants, so as to come within that particular increment?

Mr. WILLIAM L. SCOTT. I am sure this is possible, but I did not quite understand. Did the Senator say growth would be encouraged or discouraged?

Mr. FANNIN. Actually encouraged. The primary standard is 75 and the secondary standard is 60, and here we have a class I increment of legislation now before us States could only increase an increment by 5 and a class II increment of 10. Under the stipulations set out in the legislation now before us States could only increase an increment by 5 in class I. The class II increment is 10. In other words, that would be 20 on one and 10 on the other, and you have a secondary standard of 60 and a primary of 75. What would happen is that a company would be planning a facility, say, 5 years from now, and they would say "Perhaps by that time this increment will be used up by other facilities, so we could not build that plant; we had better build it now."

Mr. WILLIAM L. SCOTT. It is my understanding that the Moss amendment would strike this section 6.

Mr. FANNIN. Yes.

Mr. WILLIAM L. SCOTT. But at the same time, under the Court decisions, the Environmental Protection Agency is doing the same thing under regulations.

Mr. FANNIN. Yes.

Mr. WILLIAM L. SCOTT. I think we are overregulated today. I think Congress has actually the authority and the responsibility of establishing this, and not leaving it to unelected people downtown.

Mr. FANNIN. Yes. What the Senator is saying is true, but this does not bring about the desired solution. It seems to me we can find ourselves, as the Senator has stated that we are trying in this legislation for practically a no-growth program.

Mr. WILLIAM L. SCOTT. Does not the Senator agree that if we have air quality standards established nationwide, if the quality of the air were high enough to protect the health and welfare of the citizens of Arizona, it should be high enough to protect the health and the welfare of the citizens of Virginia and other parts of the State? And then if there is a particular problem area, we should leave that up to the States and to the localities.

Mr. FANNIN. Yes.

Mr. WILLIAM L. SCOTT. That is land-use planning, when we go further and let the Federal Government decide where they can put a plant locally or where they can put a shopping center locally, and that is what they can do if we do not adopt my amendment to the Moss amendment.

Mr. FANNIN. The Senator from Arizona wholeheartedly agrees, and certainly it would be devastating to many areas of the country if this legislation were adopted with these stipulations in it.

It is my understanding that natural pollution, dust, and organic particles, would not be included in allowable increments, but I doubt we yet have the ability to keep accurate measurement of pollution sources. This factor could be addressed in the study, could it not? It is one of the great needs we have that justifies the study.

Mr. WILLIAM L. SCOTT. Yes. I am in favor of a study. But I think we need somehow to cut the string now to eliminate these continued

regulations because we are still in a recession in this country. Our unemployment is too high.

MR. FANNIN. What has happened, I am sure, was never intended by Congress, when this legislation was approved—that we should place a barrier upon our economy, and that we should cost the country thousands upon thousands of jobs, maybe millions of jobs. We cannot even evaluate how many jobs have been lost because of some of the unreasonable stipulations that have been promulgated in the regulations. I cannot blame the EPA for something that we in Congress have done, and I feel that if we had had a few studies before we adopted the legislation, maybe we would not be in the jam we are today.

The Governor of the State of Arizona, Governor Castro, wrote a letter to me. The letter answers some of the questions about which both of us have expressed concern as to whether or not around the country there is a great distress about what is happening with the promulgation of the different regulations that have been in effect, and those that would be in effect if this legislation is approved. The letter of Governor Castro of the State of Arizona spoke specifically to the issue of section 6. Although allegedly this would be a State-administered program, the western States, with large amounts of public lands, would be subject to vetoes from any number of different Federal land managers. In Arizona, 45.3 percent of our land is in the Federal domain, with 26.7 reserved in trust for Indian tribes.

I defy anyone to tell me this will be a State-run program with increments of pollution already set for the entire Nation in this bill and with input by numerous other parties to make development virtually impossible in much of the rural areas of this Nation.

OFFICE OF THE GOVERNOR,  
Phoenix, Ariz., February 19, 1976.

HON. PAUL FANNIN,  
Senate Office Building,  
Washington, D.C.

DEAR SENATOR FANNIN: I wish to call your attention to the impact which the proposed Clean Air Act Amendments of 1975 have upon the State of Arizona. Of major concern is the fact that adequate consideration has not been given to the effects of land ownership patterns and the potential diversities in land management philosophies in the implementation of the amendments. Federally controlled lands in Arizona account for 43.52 percent of the land area; and Indian reservations account for 26.73 percent. The distribution of these lands are such that only a small portion, if any, of the non federal, non-Indian lands of the state would not be influenced by decisions, made by Federal Land Managers. Consequently, the economic development of this state could be unduly determined at the Federal level.

It is essential that State rights are preserved and that opportunities to participate in the decision making process are provided to local governments particularly when standards to protect human health and welfare are not exceeded.

I urge Congress to establish a study commission to investigate and analyze the implications and consequences of the nondeterioration provisions as promulgated and proposed and to consider the alternative approach outlined by my staff in the enclosed report.

Please feel free to contact me to discuss this matter of extreme concern to the State.

Sincerely,

RAUL H. CASTRO.

MR. MCCLURE. One of the most difficult portions of the committee legislation to deal with lies in this area of the State-Federal relationship. The Senator from Arizona said that the Federal Government

would control the State decision because of the ownership of Federal lands, to paraphrase his statement.

Mr. FANNIN. That is the way I was reading the Governor's letter. I will stand behind the Governor's letter in saying that with all of the different provisions in the bill, regardless of what the Senator from Idaho feels will be the case, I do not think he will deny it is going to be very difficult for the Federal Government not to enter these decisions when we consider the number of Federal parks, recreation areas, monuments, and all that are involved, adjacent to many of the areas which we are talking about. I wish to have his statements of how we are going to get away from Federal regulation.

Mr. McCURE. The reason that I wish to make the record as clear as it is possible to make it in this rather confused situation is that the distinguished Senator from Maine, the floor manager of the bill, as well as others on the committee have consistently taken the position that the language of the bill provides that the manager of Federal class I areas has the right and the duty to intervene in State decisions that deal with the kinds of structures that will take place outside of those Federal lands, but the decision shall be that of the State, so the Federal Government may have the right to intervene and to raise the question of whether or not the State action will contravene the air quality related values for which the Federal class I area was created. The final decision under the bill is the decision of the State.

If we wish to look at the ability of the State to resist that pressure, that is a separate issue, but I do think we ought to separate the issues into the question of who has the authority and then the question of whether or not they can exercise it.

Mr. FANNIN. Does not the Senator from Idaho agree that appeals are allowed by adjacent States on Federal land and they could have it tied up in court if the time permits? Is that not the case?

Mr. McCURE. Certainly any aggrieved party, whether it be the Federal Land Manager, the Sierra Club, the industry that is involved, or the State agency, has access to the courts to review what is done. But the bill as provided by the committee says that the State agency shall exercise that authority.

Mr. WILLIAM L. SCOTT. Sometimes the matter such as the distinguished Senator from Idaho was discussing is what the mind of the administrator thinks it is.

I read from page 3 of the report:

The Administrator thus could go to court to stop a permit for activities which would exceed the increments of pollution or which otherwise did not comply with the requirements of this section, including use of best available control technology.

I submit that, while the Senator from Idaho may be technically correct, it is not his mind that is going to make this decision. It is the mind of a bureaucrat, an unelected person, who may not share the statement he has just made. I say that this is something that we should eliminate, and we should be sure that the States have the final authority.

Mr. McCURE. I think the committee has done everything it can and it is trying very hard to move now to make certain the legislation says what we believe it says, make the legislative history say what we believe it should say.

I say again to the Senator from Virginia that the language he has just read from the report refers to the nonclass I areas. That language refers to the basic strategy for controlling air pollution and not with relation to the Federal lands that are involved.

Mr. FANNIN. I have a letter that was issued by others who feel that they have the knowledge that the Senator from Idaho has. Perhaps they do not have the same expertise. They bring out, among other points advanced for support of section 6, that the bill shifts responsibility for protecting air quality to the States from the EPA, which I support.

However, under section 6, the Federal Government has, in effect, a veto power over the granting of any permit for construction of a facility if the Federal land manager merely alleges that emissions from a proposed major emitting facility may cause or contribute to a change in air quality or class I area.

The burden of proof is on the owner or operator of such facility to demonstrate that emissions of particulate matter in sulfur dioxide will not violate the infinitesimally small increases in pollution in class I areas. How the burden of proof may be met is not explained.

Mr. McCURE. I support the Scott amendment, incidentally, so that nobody will have any misapprehension about where I stand. I think it is a very clear statement of philosophical difference between the approach being furthered under existing court law and EPA regulations. I will vote for the Scott amendment because it says that we do not know enough about this field to legislate there now.

However, I am struggling, as best I know how, to make the record absolutely certain as to what the committee said in this particular language. The people who seem to oppose it the most are the ones who are making it read the worst.

I refer to a statement made last week by the distinguished floor manager of the bill which appears on page S. 12577 of the Record, dealing with this very point. Senator Muskie at that time said this:

... the State makes the decision as to whether or not he is right.

I cannot underscore that too strongly as to the intention of the committee throughout the entire hearing, throughout the entire markup of the bill. It is the pivotal point around which much of the discussion takes place as to who should make that decision—the Federal land manager or the State.

With respect to what the Senator from Arizona just read about the applicant having the burden of proof, the applicant does, but that burden of proof will be judged by the State, not by the Federal administrator.

I say to the Senator from Virginia that a State bureaucrat is not necessarily different from a Federal bureaucrat. He still is unelected, but I think he is more approachable.

Mr. FANNIN. The debate over the significant deterioration issue has been one of the most heated Clean Air issues since the amendments of 1970. It is clear that we have yet to even agree on the best remedy to the current committee version. I would like to explain my position and reasons for supporting the clearest solution to this debate—that is Senator Scott's of Virginia—amendment No. 2116, which should allow

for no significant deterioration regulation during the period of a study on this concept.

I agree with the goal of preventing "significant deterioration" of clean areas. We would not want this entire country on the border of our health-hazard standards. I and others do not consider the allowed increments of pollution in this legislation "significant". Actually they have no meaning, unless the existing conditions of an area are known—along with seasonal, natural pollution estimates. This all assumes, of course, that accurate measurement can be made of different pollutants and attributed to specific sources.

Since there is such strong disagreement about the effects of section 6 in the committee bill, I would think reason demands a thorough study of the impact of significant deterioration regulations before implementation—by EPA pursuant to the court's decision or following enactment of the bill before us.

Governor Raul Castro's letter speaks specifically to the issue of section 6. Though allegedly this would be a "State" administered program western States with large amounts of public lands would be subject to vetoes from any number of different Federal land managers. In Arizona, 43.5 percent of our lands are Federal domain, with 26.7 percent reserved in trust for Indian tribes. I defy anyone to tell me this will be a State-run program—with increments of pollution already set for the entire Nation in this bill, and with veto power by enough other parties as to make development virtually impossible in much of the rural area of this Nation.

A second letter is from the director of one of our air quality control districts. As is obvious from Mr. Kopisch's remarks, he has become frustrated with the implement now, ask questions later approach.

PINAL-GILA COUNTIES,  
AIR QUALITY CONTROL, DISTRICT,  
February 11, 1976.

HON. GERALD FORD,  
President, United States of America,  
White House, Washington, D.C.

DEAR MR. PRESIDENT: On January 24, 1976, a Phoenix newspaper, the Arizona Republic, carried an item from the New York Times. This release concerned itself with purported deletions of sections of your economic message to the Congress.

Whether it was actually contemplated to include the sections involving the environment and the Environmental Protection Agency in your message, I don't consider important. What is important is that this is the first faint indication of sanity to come out of Washington in this matter. I am in complete agreement that the three issues noted in the reported environmental recommendations are probably the most important issues requiring major changes.

The issue of sulfur dioxide raised is of vital economic significance to the American people. Much, much more than they have been told.

Proper recognition has never been given that much of our energy short-fall is due to premature concern over sulfur dioxide in the 1950's and 1960's. It was this deliberately instigated concern which caused many apprehensive industries and municipalities to switch from coal to natural gas or to low sulfur fuel oil for their fuel needs. Cost evaluation analysis simply did not justify installing expensive control equipment.

The impact of this loss of coal users was a disaster to certain segments of the coal industry. The normal competitive growth of this great industry was turned upside down. Only this past year or so have we seen coal production return to the levels of twenty years ago.

It was the inability of our coal producers and consumers to pick up the extra demand resulting from the oil embargo which tossed this country into the most sickening energy crisis imaginable. The unexpected intensity of the recent depres-

sion primarily resulted from the effects of our fuel shortage and practically brought us to our economic knees.

If we are not to bring the consumer to the brink of financial disaster in the 1980's, common sense dictates that the Federal Agencies' brain wash of the American people concerning the potential harm of sulfur dioxide must be corrected.

It is almost beyond belief, that none of our leadership in Washington nor the EPA has informed the people that the high price and the shortage of fuel are a part of the cost of solving our environmental problems.

Polls quote the people as being in complete accord with our environmental goals. Would they be in accord if they were honestly informed of the total cost incurred to this point in time? Would they be in accord if the actual total future costs were completely delineated and not provided piece meal, and accurately?

If the President, the Congress and the EPA have not lost complete belief that the American people can be trusted to enter into the National decision making process, the people must be provided all the facts and all the costs involved.

The cynical hypocrisy of the Federal Government is now asking industry to convert back to coal on almost a crash basis and fifteen years too late, surely cannot escape the thoughtful citizen. Perhaps the Washington leadership should not worry though, after all, the only thing it cost us was an appreciable loss of control of our national destiny and tens of billions of dollars each year.

The Schimmel & Murawski ten year study of New York City is the first completed long range investigation of the largest city in the nation, since the Federal Agencies by decree upgraded sulfur dioxide from an indicator of pollution to an actual harmful pollutant. Their failure to find any evidence of harm from sulfur dioxide, as determined by their analysis of mortality statistics, must be given its proper emphasis. The EPA cannot be allowed to bury this report as being of no significance, as so many other reports have been.

Los Angeles County experience as reported at a St. Louis seminar in 1966 has been deliberately under emphasized. In reporting on their experience in cleaning up sulfur dioxide, they noted that year by year as the concentration levels decreased, the number of days of smog steadily increased. Los Angeles had not attacked the sulfur dioxide problem primarily because of health but because they felt it was a significant factor in their smog situation. Informally they admitted that perhaps they had inadvertently removed a beneficial component which may have had the effect of hindering the formation of smog.

Outside of federally payrolled personnel and those benefitting from the fallout of the sulfur dioxide crusade, very few engineers or scientists in this country believe there is any harm in existing atmospheric levels of sulfur dioxide. It is past time that this nation gets off this unbelievably expensive, misdirected sulfur dioxide health kick and recognize the truth.

If a nation of engineers and scientists, capable of letting men make the giant step from earth to moon, cannot agree after twenty years of intensive and well funded research searching only for the potential harm of sulfur dioxide, it has to be obvious that harm of any meaningful significance simply does not exist.

In Arizona, our most important industrial activity is the mining and refining of copper. In 1970, an important EPA official personally thrust himself into the public hearings in this State and with absolute conviction stated that the smelter industry could with existing and available technology and at a reasonable price, eliminate 90% of the sulfur dioxide being emitted from the then existing eight copper smelters. Public health officials of the State and many conscientious and concerned citizens believed him. State Statutes and Regulations were adopted to accomplish this 90% clean up. Five years later, after the expenditure of close to a half billion dollars, five of the remaining seven smelters, loaded for the first time in history with almost unmanageable debt, find it impossible to approach the 90% figure. I find the Federal Agency's 1970 actions utterly despicable and appallingly naive. Elements of bureaucratic harassment and almost childish irresponsibility has been evidenced by the EPA since 1970 in this purely Arizona matter. Even more incredible, the EPA is presently in the process of forcing still further uneconomic requirements on this hard hit industry. This, despite the objections now of a much more knowledgeable citizenry, our concerned State Health officials and a worried Arizona State Legislature.

The quoted statement, "Where the damaging effects of pollutants are confined to a locality, then the locality should be allowed to regulate itself" is the most pertinent and important statement ever to be credited to a top official in Washington. I hope that you believe this.

Any program as potentially harmful to the well being of our citizens, with the capability for punitive harassment inherent in the devastating and dictatorial

threats contained in Sections 113 and 114 of the Clean Air Act, must be returned to the control of the people.

This winter I have been reading of people freezing to death for lack of fuel I have been reading of people dying because of malnutrition. Reading of many desirable social activities for our young people curtailed or eliminated because of the expense of heating the required facilities and reading of cold churches, cold schools and cold homes.

Does such suffering actually balance off the advantages we feel will accrue once we achieve clean air?

Is there a difference between the colds, flu and asthma attacks whether caused by cold homes or by air pollution? Is there a difference in the absolute finality of death whether caused by freezing, malnutrition or by air pollution?

It appears that the Congress in their sincere desire to protect the health and the well being of the people, initiated a process which is degrading and killing the people at an increasing rate each year.

It appears that we have developed a debit balance in the mortality and morbidity statistics as a result of the almost holy crusade for clean air. This is a horrifying thought, but what is more horrifying is that these statistics will continue to worsen year after year even were we to stop all actions previously taken. The effects of those actions are turning out to be irreversible. Actions presently on the legislative drafting boards and in the EPA regulations can only accentuate our existing problems making it even more difficult for those of our people with marginal incomes to obtain food, fuel and the other necessities required for comfortable, healthful living.

Even were the premises scientifically correct, this whole clean air crusade should be re-examined for all its consequential results. But since many of the major premises are not scientifically correct, the course and momentum of our environment thrust must be modified.

The philosophy that expensive corrections must be made simply because the *potential for harm may exist*, must be rigorously questioned. This nation cannot afford the cost of pure air. We may be able to justify the cost of healthful air, but even this justification must give proper and honest consideration to both the positive and negative results which will occur.

All the qualitative realities of living and dying must be balanced. Death is the ultimate reality, but the quality of the life we live until we face that reality is important also. Clean air is actually only a single relatively minor component of a multicomponent complex total that make for enjoyable living. We must regain a proper sense of proportion about environmental matters.

On April 4, 1974, I wrote to Congressman Conlan requesting help. I expressed at that time my personal frustration with the EPA and the methods used by them to carry out their "Congressional Mandate". I am attaching a copy of that letter as I find a year and a half later I still feel exactly the same about the EPA.

The last paragraph of the Conlan letter stated: "You fellows in Congress have the power to make some corrections or foul the whole mess up worse. I can only hope that you give this some deep thinking and make some vital corrections before it is too late".

Now I am asking the President of the United States to take the necessary time to give adequate thoughtful consideration to the issues I have raised and to use the prestige and power of your office to protect the most fundamental rights of the American people.

Respectfully yours,

L. C. KOPISCH, P.E.,  
Director, Pinal-Gila Counties  
Air Quality Control District.

Mr. FANNIN. Is it evident from the floor statements inserted by many Senators how controversial this section is. A study of this regulation's impact is essential. Completing the study before implementation of these far-reaching regulations is clearly the only intelligent means of meeting the overall objective—protecting Americans from unhealthy air.

In summary, we are not debating the concept of "significant deterioration." We are debating the ability of section 6 to get the job done—not just better than existing EPA regulations, but at all.

What I foresee in Arizona, under enactment of section 6, is an ill-timed scramble by industry and the utilities to overbuild during the next few years in order to have a share of the stringent increments, before other facilities have used them up and prevented all further growth. Then consumers will have to pay for plants which become obsolete almost before they are needed.

Mr. GARN. I rise in support of the Scott amendment to the Clean Air Act amendments. It seems to me that this approach to the critical problems of nondeterioration of pristine air presents the most logically defensible case, and that we would be well advised to adopt it. Let me point out what the situation will be if we adopt the Scott amendment.

First of all, the primary and secondary air quality standards established by the 1972 Clean Air Act will remain in effect. The Scott amendment will not reach them, and I do not believe that they should be touched. I know that I would oppose any effort to weaken these standards. These standards go directly to the obligation of the Federal Government in the area of air quality: They protect human health and welfare. That is an obvious need, and one that Congress was quick to meet when air quality legislation was originally proposed.

However, saying that the Government has an obligation to protect human health is much different from the establishment of a national policy of nondeterioration of any air quality. That is a responsibility that should not, in my opinion, be undertaken at this time, certainly not on the basis of the testimony which has been taken by Congress to date.

In my remarks the other day, I emphasized that only 3 hours of hearings had been held last year on nondeterioration and only four witnesses had testified, hardly sufficient evidence on which Congress can act.

I do not believe that Congress intended such a policy when the 1970 act was passed. I believe that the Environmental Protection Agency has misconstrued the law passed that year. It is in the nature of bureaucracies to delegate to themselves more authority than Congress intended, and EPA has shown that tendency many times. Occasionally, the Federal courts help them, but they are quite capable of expanding their reach on their own. This nondeterioration policy is one good example; another is the policy of specifying what measures companies must use to achieve emission standards, rather than letting the companies use their own judgment in attaining the standards.

The Scott amendment goes to the heart of this problem by removing the statutory base EPA has used to promulgate nondeterioration regulations. Senator Scott's amendment is a neat, adequate surgical procedure.

In addition, adoption of the Scott amendment would leave in place the laws and regulations of the several States, protecting the quality of air within their jurisdictions. In my opinion, that is where any responsibility beyond simple health protection ought to lie. The local officials are the ones who know the local conditions, and are best equipped to weigh the relative values of preservation and development. The State of Utah long ago adopted an adequate law protecting air quality in the State, and my information is that other States have done the same. Contrary to popular belief, we in the West are not bent on de-

stroying our natural environment, or in dirtying every liter of clean air. We know the mountains, the valleys, and the purity of the air around them. We are not certain that the residents of New York City and Los Angeles are all that well qualified to tell us how to protect our heritage.

Should the Scott amendment fail, I would then support the Moss amendment, of which I am a cosponsor, providing for a study of the impact of a national policy of nondeterioration. The adoption of such a policy is a momentous one, one that must be thoroughly studied before it is adopted. I have requested from a number of Federal agencies an evaluation of the impact of nondeterioration on the areas of responsibility under their jurisdiction. Without exception, they have responded that there is, at the present time, insufficient information on which to make a realistic evaluation. In short, we need more data, and we need time to obtain it. In the meantime, the EPA regulations remain in effect and we have the Federal primary and secondary standards and the State laws, as I have already noted. A vote for the Moss amendment, or for the Scott amendment, is not a vote for dirty air. To say it is is a slander on the 50 States of the Nation, and on the handiwork of the Congress of the United States in 1970.

To me, these amendments simply make sense, that we delay until such time as we can base a decision on facts rather than on emotion or the politically popular position to be for clean air.

There is not one Member of this body who is not in favor of clean air, but we must balance the needs for healthful clean air with the needs for communities and States around this country to have adequate development so that they can provide jobs in their communities and not go beyond the needed health standards to impose esthetic values from the national level. I hope the Scott amendment is adopted and I support it.

Mr. THURMOND. I have carefully considered the amendment of my colleague from Virginia (Mr. William L. Scott), and have decided it is meritorious and worthy of my support, for the following reasons:

First, like the Moss "significant deterioration" amendment to the clean air bill, which I will support if the Scott amendment fails, the Scott amendment recognizes that Congress does not yet know all the answers regarding the extent to which clean air areas should be kept clean, the most desirable methods of preventing undue degradation of air quality, and the implications of a new policy in this area. Premised in part on this lack of knowledge of what "prevention of significant deterioration" means in terms of its effects on desirable economic growth, the Scott amendment deletes section 6 of the bill—the section which establishes the new policy on nondegradation.

I agree that Congress should withhold definitive judgment on these questions until the state of knowledge regarding the impacts of this policy and its compatibility with other national goals are more accurately determined. I support the National Commission on Air Quality study of these issues and look forward to thorough consideration of the recommendations it is expected to make to Congress on this subject.

Second, the Scott amendment would nullify the effects of Court decisions in the case of Sierra Club against Ruckelshaus. Judicial interpretations of an ambiguous law in this case, which was eventually upheld for the Sierra Club plaintiffs in a tie decision by the U.S. Supreme

Court, have compelled EPA to issue nondegradation regulations without specific guidance from Congress.

I have always been opposed to legislating by the courts and/or by the executive branch. Making laws and establishing public policy are, under the U.S. Constitution, the responsibility of Congress. Thus, with respect to this particular issue, I agree that Congress should prohibit the courts and the Federal bureaucracy from establishing through the back door a national policy on protection of clean air areas. The Scott amendment accomplishes this purpose.

Third as the Senator from Virginia (Mr. William L. Scott) has pointed out, the adoption of his amendment is hardly the radical, dangerous move that the opponents of the amendment claim. If the Scott amendment is passed, we still have the primary ambient air standard to protect public health and the more rigorous secondary air quality standard to protect public welfare including sensitive crops, property values, et cetera. Even those who favor instituting a nondegradation standard now agree that we still face a herculean task in many areas of the Nation to improve air quality and reduce air pollution down to the level of the secondary standard. Furthermore, the Scott amendment does not prohibit any State from enacting, on its own or in cooperation with other States, air quality standards more stringent than the existing national ambient air quality standards.

Thus, I support the Scott amendment because I think it makes sense as public policy at this time. I do not want to prejudge the issue of prevention of significant deterioration of air quality in clean air areas, because I think it is in the public interest to work toward a cleaner, more healthful environment. This bill creates a National Commission on Air Quality to study all phases of air pollution problems and various control strategies. The Commission is required to make its recommendations on nondegradation and other air quality issues to Congress. I look forward to carefully reviewing these forthcoming recommendations and other relevant evidence with an open mind.

We readily admit that we do not know all the answers with respect to this issue and that we need more information. There is no compelling reason to enact a far-reaching, growth-limiting, nondegradation public policy into law now.

Mr. WILLIAM L. SCOTT. I appreciate the remarks in support of my amendment by the Senator from South Carolina. He is a cosponsor of this amendment. Senators Bartlett, Curtis, Eastland, Fannin, Garn, Goldwater, and Helms are also cosponsors.

#### STATEMENT BY SENATOR CURTIS

As a cosponsor I wish to support the amendment of the Senator from Virginia, Mr. Scott, which will eliminate those provisions of the Clean Air Act Amendments regarding significant deterioration.

I know of no person in this chamber or in the Congress who would consciously vote for dirty air, or who is against our efforts to clean up the nation's air. I am for clean air, and I think the programs we have established in the Clean Air Act have done much to clean up the air.

I believe we have taken a logical, stern approach to regulating harmful emissions that have led to serious pollution, and that in time we will be able to develop even greater technology for controlling air pollution.

Under the Clean Air Act, we have established ambient air quality standards in two levels that are designed to ensure the health and welfare of the nation. This program is doing an excellent job in regulating and controlling pollution of our air. We are on the road to ensuring that our air and atmosphere will not become

dangerously polluted in the future, while at the same time allowing our economic and technological progress as a nation to continue.

But now we are being told by some in and out of the Congress that controlling and abating pollution and cleaning up our air aren't good enough. We are being told that we must protect areas that have no pollution from ever having the slightest bit of pollution. We are hearing that existing areas of the nation with air quality much higher than is required by either the primary or secondary standards, must not have any increase in pollution or deterioration whatsoever.

And I announce that I am not opposed to that ideal. But there is one aspect of such purity of air with which I am concerned—to date I know of no technology, I have heard or read of no scientific development or research, and I am aware of no amazing inventions or discoveries that would automatically put a hold on our current level of air pollution or that would reduce it.

So far as I know, there have been no discoveries of devices that would control air pollution emissions one hundred percent—from automobiles, manufacturing plants, residential furnaces, commercial and public incinerators, or utility plants.

That being the case, Mr. President, I fail to see how we could possibly establish a standard of air quality that would allow for no addition of any pollutants or particulates to the atmosphere, without suffering the obvious consequences of an end to progress. We would, in reality, have to come to a standstill.

Now I know the proponents of the significant deterioration provision have said that it won't stop all progress, that it will allow continued growth and productivity. But what they haven't told us is what the cost will be for such continued progress. What will the cost be to install hastily research devices that will lower our energy output? Hundreds of millions of dollars? Does anyone know? I don't think so. That is precisely why we cannot afford to initiate a program purely on emotions. We must first have the study, research and investigation will enable us to weigh the benefits against the costs.

It was not the intent of Congress in 1970 when enacting the original Clean Air Act, to establish an air quality standard to be arbitrarily applied nationwide. Yet that is what is being debated here because of court decisions based on the 1970 Act and because of efforts to have these amendments specify such a standard.

No! In 1970 we enacted a tough, hard-hitting bill that was designed to regulate and reduce air pollution on two levels. Through implementation by the Environmental Protection Agency, the Act was to protect human health in primary air quality standards, and protect the ecology around man in secondary standards.

As has been the case with much of the legislation passed by Congress in recent years, that 1970 Act was apparently so ambiguous, so imprecise as to result in court decision that "no significant deterioration" of air quality could be allowed under the Act.

Now that we are confronted with the issue, we have the opportunity to clarify the intent of Congress by legislative action. Instead, it appears we would write the court decisions into law.

Besides the obvious fact that disallowance of any increase in air pollution would be discriminatory against regions of the country where we have little or no pollution—particularly in the West—we will be establishing once and for all in law a constraint that can only shackle any economic growth and development and further our energy crisis.

We are crying for more needed jobs to combat unemployment on the one hand, while on the other we are establishing arbitrary standards that will slow if not stop any economic growth that can provide those jobs. At the same time we are setting back our energy independence effort seriously.

By not allowing any pollutants in the air of our pristine or pure areas of the West, we are stopping any future energy production in those areas which is vitally needed nationwide. What would proponents of this measure have us do? Build new electric generation plants in the northeast and industrial midwest where air quality standards are already constricted by heavy pollution? Or, perhaps, build no new facilities and have severe shortages of electric power?

Whatever the intent or thoughts, under the existing program being implemented by the EPA, and under these amendments before us today, we would virtually preclude any new construction for energy production in most of our presently pure western areas where the fuel for such production is readily abundant.

In an interview in the July 19, 1976 issue of U.S. News and World Report, Deputy Administrator John Hill of the Federal Energy Administration warns that unless we modify the current program, the energy cost to the nation under

the Clean Air Act will "be roughly equivalent to the 1.6 million barrels a day of oil that the Alaska pipeline will deliver."

I agree with Mr. Hill when he says "No one wants to be for dirty air," but that what we need "is a plan that will hold pollution to levels that protect health but at the same time not exact any unnecessary economic and energy penalties." Mr. Hill is correct when he says "We have too many other national problems that have to be balanced with the Clean Air Act," and I think it is time that Congress wakes up to the fact that we can't continue to legislate individual programs without regard to all aspects of their impact and effect.

I would like to emphasize that the Administration is opposed to any effort to legislate significant deterioration. In a letter of May 28, 1976 to the Public Works Committee Chairman, the President said, "The Senate and House amendments, as presently written, fail to strike the proper balance between energy, environmental and economic needs," and he asked that the Congress eliminate those provisions dealing with significant deterioration.

Finally, I would like to quote in part from a recent paper prepared by the Library of Congress on the Clean Air Act and the issue of significant deterioration:

"The relatively slight Federal interest in the no significant deterioration rule stems from the fact that it applies only in clean air areas. The 'deterioration' referred to is a lowering of air quality down to the levels required by national primary and secondary ambient air quality standards. Those standards are set to protect public health and welfare, both broadly defined. Primary standards, designed to protect the public health, are to allow 'an adequate margin of safety.' The public welfare which secondary standards are designed to protect 'includes, but is not limited to, effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility and climate, damage to and deterioration of property and hazards to transportation, as well as effects on economic values and on personal comfort and well-being.' Thus the no significant deterioration rule, by definition, bears no relation to public health or to public welfare, broadly defined. The Environmental Protection Agency has pointed out the conceptual and practical problems of any such regulation; when measured against the drastic impact upon the State's power to control land use, Federal imposition of such a policy also raises constitutional problems.

"Prevention of significant deterioration in clean air areas necessarily involves close regulation of land use. Regulation of land use—or 'zoning' as it used to be called—clearly falls within even the most traditional concept of the State's police power. To usurp this power by regulation purportedly based on the commerce power, but admittedly not related to either public health or public welfare, may impair the State's integrity and capacity to function in a federal system."

It should be clear to all members of the Congress that the issue of significant deterioration is one of mass confusion. Where the courts themselves have been wrestling with the issue, where the administration is opposed to it because of the likelihood of an energy penalty and economic losses, where experts suggest that it is an infringement on the powers of the States, and where we already have strong air pollution control measures in the primary and secondary standards designed to protect our health and welfare, I think it would be foolhardy for the Congress to overstep its bounds by establishing a policy of no growth and land use control under the terms of significant deterioration.

I do not think the American people want this—indeed they cannot afford it. For this reason I urge my colleagues to consider all the aspects of this dangerous provision, and I add my support to an amendment by the Senator from Virginia, Mr. Scott, to eliminate any provisions concerning significant deterioration from the Clean Air Act.

MR. ALLEN. I would like to ask the Senator if his amendment would keep the EPA from implementing a national nondegradation policy during the study by the commission.

MR. WILLIAM L. SCOTT. It is my understanding that the Administrator of the EPA has the authority under existing law, and will continue to have the authority if my amendment and the amendment of the Senator from Utah are adopted, to establish nationwide standards for the air quality standards to protect the health and welfare of the people of the country. He will not have the authority to spot-zone, to pick out particular areas, and say, "You have to have a higher air

quality standard in this particular area or in this State." It leaves it up to the States and localities to set their standards above that if they care to, but not below the national standards, as long as whatever they do in the field of air quality control does not result in any pollution of the air beyond that permitted by the national standards.

The Administrator of the Environmental Protection Agency can change those standards when he feels it is in the national interest to do so. He can raise the standards or he can lower them. Congress has given him very wide discretion, and I think what Congress has done by statute is enough. I do not believe we should go any further. Leave land-use planning to the States, and let us allow the economy to continue to grow and not stagnate.

Mr. ALLEN. I want to ask one further question: Without the Senator's amendment, is it not correct that by leaving the Federal regulations, in place, Congress is implicitly endorsing the highly restrictive EPA policy toward the States?

Mr. WILLIAM L. SCOTT. Yes; that is correct. Just yesterday the Court of Appeals for the District of Columbia, in a decision wherein 14 cases were combined, upheld the right of the Environmental Protection Agency to continue to make these regulations.

Do we want Government by regulation or do we want Government by law? I think that is the issue before us.

Mr. ALLEN. In other words, the Senator's amendment would not only give relief from the provisions of section 6 of the present bill, it would go farther and limit the regulatory power of the EPA as regards the States; is that not correct?

Mr. WILLIAM L. SCOTT. The Senator is correct. My amendment does not do any harm to the amendment of the Senator from Utah, but it goes further. It would suspend the operation of any regulation during the period of the study.

Mr. HELMS. In light of the colloquy between the Senator from Virginia and the Senator from Alabama, is it accurate to say that the so-called nondeterioration standard is, in effect, nothing but Federal land use planning by another name?

Mr. WILLIAM L. SCOTT. It is land use planning in which you use air quality as the only standard for planning. I believe that good planning requires the use of many factors. Air quality should be one of them but not the only one.

I think that under the 10th amendment, under the police power, this is a matter that is reserved to the States under our dual system of sovereignty, and I think that is where it should be. The right to regulate the health and morals of the people is a State function. We have our county, our city, planning boards and zoning commissions, and they decide where a building should be located. I think that is where it should be as long as they do not do violence to the air quality that is established nationally by the Administrator of the Environmental Protection Agency.

If the quality of the air is high enough in one area to protect the health and the welfare of the citizens, then that same quality is high enough in any area to protect the health and welfare of the citizens. There may be a place like California where the local people feel that due to a specific situation they need higher air quality standards and, if they do, that is fine, let them establish high air quality standards.

If they do not want a factory in a particular area, well, that is up to them. It might be they are talking about esthetic values rather than air quality, and that is a decision which, in my opinion, should be made locally, and we should not have an administrator in Washington making decisions that local government should make.

Mr. HELMS. Would the Senator also agree that our colleagues who have assured their constituents back home that they are opposed to Federal land use planning so-called, ought to be careful in their consideration of how they are going to vote on this amendment? If they vote against this amendment, then they are, in effect, voting for Federal land use planning under another name: is that not correct?

Mr. WILLIAM L. SCOTT. Yes; I think that is true.

The Governor of Virginia and the Governors of a variety of other States, all have also indicated their support for this nondegradation policy. If you leave it out of the statutory law but you permit the court decisions to stand and the regulations of the agency to stand—and I do want to reserve time to review in somewhat greater detail this 53-page opinion that came out yesterday from the Court of Appeals of the District of Columbia because it is just full of regulations which are approved by the court that have not been enacted by Congress.

Mr. HELMS. To the Senator's knowledge, concerning the effect of the so-called nondeterioration standard—has its economic impact been studied with regard to any industry other than the electric utility industry?

Mr. WILLIAM L. SCOTT. No; but relying on my memory entirely, insofar as the electric utility industry is concerned, something like \$28 billion sticks in my mind that it may cost over the next several years to comply with the proposed standards.

Mr. HELMS. Who will ultimately pay that.

Mr. WILLIAM L. SCOTT. The individual citizen.

Mr. HELMS. The consumer, is that not correct?

Mr. WILLIAM L. SCOTT. Certainly; the electric companies and all public utilities, all business enterprises have to pass on the cost.

Mr. HELMS. In the Senator's opinion, what would be the economic effect of the adoption of this standard, let us say, on the economy of the less-developed areas of our country?

Mr. WILLIAM L. SCOTT. Once again, I would have to generalize.

It has been said, and I have a number of editorials which indicate the opinion of editors around the country, that this is a no-growth policy.

Mr. BUCKLEY. The Senator said this is a no-growth policy. Is the Senator aware of a single example of where a permit was filed and denied under the existing regulations?

Mr. WILLIAM L. SCOTT. I am not one of the regulators. I am not an employee of the Environmental Protection Agency.

I have not searched their records. But I do know that we have groups like this going to the court. We have the Dayton Power & Light Co., intervenors, we have the Public Service Co. of Colorado, the Utah Power & Light Co., the State of New Mexico, the Pacific Coal Gasification Co., the Utah International, Inc., the Indiana-Kentucky Electric Corp., the Dayton Power & Light Co., the Buckeye Co., et al.

All of these have others under this phrase "et al."—and others.

We have the American Petroleum Institute, the Alabama Power Co., the Montana Power Co., the Salt River Project Agricultural Improvement and Power District, and others.

Somehow they are being hurt or they undoubtedly would not be there.

The mail I receive from the business community indicates that the business community may well be hurt under the proposed new Federal requirements.

The United States Chamber of Commerce is deeply concerned over the Federal nondegradation concept, and businessmen generally seem to be opposed to it. The Wall Street Journal indicates in an editorial that my amendment is essential and is what Congress should do.

I do not know the details or specific instances, but I am sure there may well be applicable situations around the country.

Mr. BUCKLEY. The Senator from New York has sought to find an example of any plant that has been denied the right to establish itself under the current policy of nondeterioration. He has discovered none. In fact, studies made by the EPA and FEA, and others, have demonstrated that under the increments in the Senate bill it will be possible to build a 5,000-megawatt, electrical power generating facility, which is twice as large as any we have.

Mr. WILLIAM L. SCOTT. Maybe the Senator can say why these electric companies are going to court.

Mr. BUCKLEY. I believe, they are uninformed as to what the existing law is, and what they can do.

Mr. HELMS. What the Senator from Virginia proposes to do is to stay the effect of the EPA nondeterioration regulations during the 1-year period set out in the Moss amendment. That is correct, is it not?

Mr. WILLIAM L. SCOTT. I am not sure whether the Senator from Utah changed the 1-year provision for the study.

I am told he has not changed it, so it would be during the 1-year period.

Mr. HELMS. Very well.

The Senator from Utah is on the floor and he has not indicated to the contrary, so I assume the 1-year period does continue.

I would prefer that the court-directed policy of "no significant deterioration" and EPA regulations promulgated subsequent to that court decision were dropped altogether, and that Congress mandate a return to actual intent of the 1970 Clean Air Act, which was to set national air quality standards that apply uniformly.

Any congressional mandate for the "no significant deterioration" standard is, in effect, a mandate for "no growth" for many regions of this country, as the able Senator from Virginia and others have pointed out. Federal bureaucrats will be able to exercise control over every locality and region in the country, determining what areas will grow economically, and those which will not grow, regardless of the needs of the people who live in the area. In effect, the "no significant deterioration" standard is nothing less than a Federal land use policy by another name, as was emphasized in a colloquy earlier this morning.

Many Governors have expressed concern about the built-in potential for mischief inherent in the legislative adoption of this standard. I happen to believe that States and localities know best what their needs

are, both as to air quality meeting national standards of the 1970 act, and to their own area's economic growth.

The Governor of North Carolina, the Honorable James Holshouser, has expressed his opposition to the 1976 amendments:

"North Carolina is well aware of the provisions of both the House and Senate versions of amendments," Governor Holshouser has stated, "and we oppose the enactment of either of these amendments in the Law."

Similarly, Gov. Reubin Askew, of Florida, in a letter to Senator Randolph, strongly urged that—

You consider the consequences of adopting these provisions and empowering the Federal Environmental Protection Agency (EPA) to preempt the states' prerogatives in these areas. It is our position that the states are more capable of evaluating the economic and social implications of the desired air quality within their boundaries than EPA.

Gov. Cliff Finch, of Mississippi, has warned that—

If pending amendments to the Clean Air Act are passed, it will virtually halt economic development in our state.

What we have here, is another confrontation with the growing reality that a mushrooming Federal regulatory bureaucracy is moving inexorably to total control, toward the twilight of the States, toward complete domination and control by the Federal bureaucracy.

If for no other reason—and there are countless other reasons—than the issue of State sovereignty, the Senator from North Carolina would be strongly supportive of the amendment of the Senator from Virginia.

By various standards of measurement the State of Mississippi is said to be one of the poorest States in this Nation. I think the question is relevant as to Mississippi and to other States which are trying to burgeon themselves upward, to provide a better life for their people.

I believe we have to raise the question as to whether we are going to deny Mississippi and other States the economic growth they so badly need simply to keep air in that State purer than the standards set by the Clean Air Act of 1970. Or, to put it another way, to satisfy the whims and caprices of Federal bureaucrats in Washington, D.C.

Adoption of the no significant deterioration standard well could have that effect in Mississippi and other States.

Governor Finch said:

The limitations that would be imposed by the pending amendments are so stringent that development would be severely impacted.

Governor Milliken, of Michigan, has stated his concern that the 1976 amendments, "could lead to federally mandated land-use programs based on air quality."

We have discussed that here today.

I say again that Senators who have gone home and assured their constituents, or who have written to their constituents, saying, "I am opposed to Federal land-use programs," had better be attentive to how they vote on this amendment of the Senator from Virginia today. Otherwise, sooner or later, the people back home may legitimately conclude that some of their Senators have been talking out of both sides of their mouths.

The list of Governors opposed to our concern about the adoption of and continued use of the no significant deterioration standard is long. Not only the Governors, but many businessmen, workers, and labor leaders have expressed themselves on this matter.

I ask that excerpts from several of the hundreds of letters I have received be printed in the Record at this point.

DeSoto, Inc.,  
Greensboro, N.C., June 9, 1976.

Hon. JESSE A. HELMS,  
U.S. Senate, Senate Office Building,  
Washington, D.C.

DEAR SENATOR HELMS: DeSoto, Inc., is a major manufacturer of paints, wall-covering, furniture and detergent and has plants in many states. Our plant in Greensboro produces various consumer paint products.

We are deeply concerned about amendments now being considered by Congress to the Clean Air Act. In particular, the non-deterioration amendments will have a serious impact on our plant, other plants of DeSoto, Inc., and industry throughout the United States.

This non-deterioration clause will effectively stop the building of new industrial plants. It will increase the consumption of oil by eliminating coal as an acceptable energy source. It will increase the costs of raw materials and finished goods. The total effect will be a disastrous impact on the economy. Through the present ambient air standards, the Government has adequate tools to protect the health of our country and environment. Consequently, there is no need or justification for adopting this amendment on top of the present ambient air standards.

I therefore urge you to vote against any non-deterioration amendments to the Clean Air Act.

Yours very truly,

W. C. SHEEHAN, Plant Manager.

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GREATER DURHAM,  
CHAMBER OF COMMERCE,  
July 13, 1976.

Hon. JESSE HELMS,  
U.S. Senate,  
Washington, D.C.

DEAR JESSE: My Directors have asked me to write you and express their concern over S. 3219 and H.R. 10498 which include provisions to impose air quality standards that go beyond the requirements of health and welfare. As we understand it, these bills support the concept that there must be "no significant deterioration" of the air quality in any area where the air is already better than present federal standards!

Our Board feels that enactment of these bills will have a serious impact on many existing industries as well as on future economic development throughout the country. We are also concerned over the fact that the methods for measuring the air standards called for by the bills have not yet been adequately defined and, in general, the long range impact of the bill has not been properly assessed. Our Board very much opposes the non-deterioration provisions of these bills.

Very truly yours,

ROBERT H. BOOTH,  
Executive Vice President.

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BANDAG,  
May 24, 1976.

Hon. JESSE A. HELMS,  
U.S. Senate, Senate Office Building  
Washington, D.C.

DEAR SENATOR HELMS: As a businessman I am deeply concerned with the ramifications that the issue of "non-degradation" or "significant deterioration" in the Clean Air Act Amendments of 1975 will have on the business community.

While I support the protection of pristine air quality over a few irreplaceable natural areas, when such a strategy is applied in large areas, I feel that the considerations other than just a desire for clean air have to be included. I urge you to oppose the "non-degradation" issue of the Clean Air Act Amendments of 1975 because of the dubious constitutionality of such legislation, the lack of satisfactory investigation of all factors in light of the enormous impact of such legislation, and the inflexibility of the issue to take into consideration certain local characteristics.

The main points to consider are:

1. Is the need for and the direction of a "non-degradation" policy to be based solely on a single judicial interpretation of the Clean Air Act of 1970? The Clean Air Act of 1970 neither mentioned nor defined significant deterioration. Congress has never stated a policy concerning the issue of "non-degradation". Also, in the Clean Air Act of 1970, Congress found that "the prevention and control of air pollution at its source is the primary responsibility of State and Local governments". The legislation as proposed gives rise to legitimate concern for the public intrusion upon proper functioning of our federalist system.

2. What does the "non-degradation" policy in its present form mean for economic development; what does it mean for the development of our natural resources and what is it going to do for present land use policies? These are factors which have not been, but must be, considered and investigated before such important legislation is enacted.

3. Each local area will have its own unique problems in satisfying the proposed "non-degradation" laws. Implementation could impose severe economic and/or social constraints on the area with little or no benefit derived from the cleaner air. Is it the intent of Congress to enact standards stricter than needed to protect human health and welfare at the expense of jobs, growth, and independence from other countries for basic materials merely for the sake of clean air?

A more desirable approach to the proposed "non-degradation" provisions would be to:

1. Have Congress state its position on "non-degradation" rather than allowing it to evolve through judicial interpretation.

2. Except in a few special areas under control of federal government, "non-degradation" limitations should be determined at state level to best reflect the social and economic factors, in addition to the scientific justification for such standards for each local condition.

Again, I urge you to oppose the "non-degradation" issue in the Clean Air Act Amendments of 1975.

Sincerely,

VIRGIL L. KING, *Plant Manager.*

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DEERING MILLIKEN, INC.,

May 4, 1976.

Hon. JESSE A. HELMS,  
*Senate Office Building,  
Washington, D.C.*

DEAR JESSE: I have been concerned for proposed amendments to the Clean Air Act, especially with regard to the issue of "non-deterioration." As you know, this legislation could seriously impair the continued orderly development of our less populated areas, and could have a direct impact upon the textile industry—particularly in the event of curtailed gas and oil as energy sources.

Due to the lack of dependable data, the questions raised by many concerning the economic and environmental impacts of the proposed legislation have not been answered. In my judgment, a thorough study of these impacts should be made prior to the implementation of the "non-deterioration" legislation. Recent history reminds us that a number of our environmental decisions, though well intentioned, have been hastily made. For example, recall the issues of phosphates in detergents, cyclamates in soft drinks, and possible problems with the catalytic converters on the automobile exhaust. In addition, of course, the 1972 FWPCA is beset by legal challenges on all sides. In short, now is the time for reasoned rather than emotional legislation in the environmental area.

Sincerely,

ROGER MILLIKEN.

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OUTDOORS UNLIMITED, INC.,

Ogden, Utah, April 28, 1976.

Hon. JESSE A. HELMS,  
*U.S. Senate,  
Washington, D.C.*

DEAR SENATOR HELMS: Outdoors Unlimited is a non-profit citizens conservation organization with a total membership of 4,540 (752 individual and 3,788 affiliate memberships) as of 2/29/76. The common bond of our diverse membership is the

desire to see the strategy of multiple use management implemented as widely and as wisely as possible on our public lands.

We believe the "non-deterioration" concept set forth in the Clean Air Act Amendments (S. 3219) would have a disastrous effect on crucial development of energy supplies, and multiple use land management, which will serve to cast intolerable burdens on the consumer. The uncompromising rigidity of the "non-deterioration" proposals will inflict a staggering squeeze on all aspects of land use. It is our conviction that the "non-deterioration" provisions are based on the most scanty evidence of adverse health effects with no economic considerations.

It is our view that this subject should not even be considered until an exhaustive study has been made to establish confidence that serious economic injury will not result from such a decision.

Thank you for your consideration.

Sincerely yours,

JOHN H. LAGRANGE, *President.*

[Telegram]

THOMASVILLE, N.C.,  
April 28, 1976.

HON. JESSE HELMS,  
Senate Office Building,  
Washington, D.C.

Urge your efforts delete "non-degradation" provisions from Clear Air Amendments bill (S. 3219). This single-purpose, land-use control feature would significantly cut economic growth and eliminate jobs. Understand no legislative hearings have addressed this section of bill. Hope you insist on such hearings prior further consideration this antijob approach. Also urge you support Moss amendment for a study commission "nondegradation."

TOM A. FINCH, *President.*

The no significant deterioration standard was not mandated by the 1970 Clean Air Act. It is a creature of judicial interpretation and bureaucratic rulemaking. It does not protect the health and welfare of the American people; that is done by the standards set out in the 1970 Clean Air Act. What the no significant deterioration standard does do is set up an arbitrary control over localities which have air quality higher than the national standards set by the 1970 act, so that those localities in effect cannot engage in economic expansion which they feel to be vital and necessary for their own well-being.

Localities should have local control over their own economic and industrial expansion, within the health and safety standards set out in the 1970 act. We should not allow the courts, EPA, or ourselves to mandate otherwise.

Mr. WILLIAM L. SCOTT. Under present law, State and local governments can provide for higher air quality standards either statewide or in problem areas. My amendment would not in any way restrict that State authority. This is as it should be because the nondegradation concept is tantamount to planning or zoning on a local or area basis where air quality is the only factor considered. Yet land planning over the years has been a function reserved to the States and localities under the 10th amendment of the Constitution and under the police power concept, whereby the State and local governments retain the power to regulate matters regarding the health and the morals of citizens within their jurisdiction.

Unless we eliminate the nondegradation regulations, the elimination of statutory authority for practical purposes is a nullity, because nondegradation will remain as a policy of the Environmental Protection Agency unless yesterday's decision by the court of appeals is reversed by the Supreme Court of the United States.

It is a policy the administrator of EPA has admitted goes too far. This is indicated on page E4222 of the Congressional Record of July 30 of this year in which Congressman Paul Rogers, of Florida, quotes from a letter to the Senator from Utah (Mr. Moss) in which the EPA Administrator, Russel Train, states that—

Current regulations provide much more of a role for EPA in the process than I would prefer.

The Senator from Utah may well want to put the entire letter of June 11 from Mr. Train into the Record at some later point. However, I ask to have printed in the Record at this point a copy of a letter dated May 28, 1976, from the President to the chairman of the Senate Public Works Committee. [See **President's Message, May 28, 1976.**]

I call attention to the next to the last paragraph in which President Ford sets forth the administration's position on nondegradation. I read as follows:

In view of the potentially disastrous effects on unemployment and on energy development, I cannot endorse the changes recommended by the respective House and Senate committees. Accordingly, I believe the most appropriate course of action would be to amend the Act to preclude application of all significant deterioration provisions until sufficient information concerning final impact can be gathered.

This is the precise purpose of my amendment. The chairman of the subcommittee, the floor manager of the bill, did refer to it some weeks ago as being the only amendment, to his knowledge, that accomplished that purpose. He was critical of the President's position at that time, and also of my amendment.

My amendment has received substantial editorial support.

One of the editorials is by the Wall Street Journal of July 26. It is entitled "Senator Muskie's No-Growth Bill."

The Journal states:

What Congress should really do, though, is simply accept the amendment of Sen. William Scott of Virginia, who would strike the "no significant deterioration" approach and return to the actual intent of the 1970 Act, which was to set national air quality standards that apply uniformly.

A syndicated columnist, Mr. M. Stanton Evans, wrote an article which appeared in various papers around the country entitled "Scott Amendment Should Pass."

The Evans' column concluding paragraph reads:

All the elements of our current distress are enfolded in this issue: usurpation of congressional authority by courts and bureaucrats; Federal controls imposed upon the States; backdoor approaches to land-use planning and "no growth" zealotry; and counterproductive regulations that create more problems than they cure. Senator Scott has taken on a formidable challenge; here's hoping that he wins his battle.

The Northern Virginia Daily of July 14 contained an editorial:

Senator Scott's amendment makes sense to us. All of us want a wholesome environment and pure air for ourselves and for future generations. But it is also possible to go too far in legislating a stringency that is not required. We believe Senator Scott's amendment is a fair approach to providing the balance needed in air purity while enhancing the solution of the Nation's energy and economic needs.

Mr. RANDOLPH. I have listened with interest to the recital of those editorials and articles which seem to indicate that this is a "no growth"

bill. This is an assertion, by implication and even direct quotation, that is in error.

I wish to underscore that this measure comes to the Senate from a committee of the Senate, the Committee on Public Works, which does believe in growth. This committee, as my colleague knows, has the jurisdiction and the responsibility for the authorization and construction of the highway systems of the United States. We have the responsibility for water resources programs and economic development programs of importance to this country. These are programs which are growth in nature, and to designate, as has the Wall Street Journal, this measure as a "no growth bill" is totally inconsistent with the philosophy of the Public Works Committee.

I well understand that there is this outpouring of no growth attached to the legislation which has been reported from the Public Works Committee. There may even be some disagreement in connection with the amendment offered by the Senator from Virginia (Mr. William L. Scott) as to whether this is a no growth bill. Let me say to my colleagues that this measure is not designed to limit growth. The focus of the bill is to provide for growth and development in a manner which maintains air quality in so-called clean air areas.

I do say, that the Wall Street Journal, in my opinion, is inaccurate when it calls this legislation "no growth" because we are intensely interested in the development of industry and business, commensurate, of course, with the high quality of the environment in the country in which we live. I do not think they run head-on one against the other. The well-reasoned attitude of the committee expressed in the bill as reported to the Senate will commend itself to the Senate.

**Mr. WILLIAM L. SCOTT.** I did, a few minutes ago ask to place in the Record a number of editorials. One of them is an editorial from the Bluefield, W. Va., Daily Telegraph. It is dated August 3, 1976, today's date, and in the center of the editorial, in reference to non-degradation, it has this paragraph:

This, of course, is a stunning blow for a great many areas whose hopes are pinned on the acquisition of new industries or other forms of economic development. It means simply that if the EPA is to continue to have its way, these areas cannot progress economically if this progress is to be accompanied by any lowering of the present air purity levels, despite the fact that significantly greater levels of deterioration are present in other areas, and with no evidence that those levels pose a threat to health or to life.

On July 23, the Lynchburg, Va., News referred to the legislation before us as a "clear disaster," and, in its closing paragraph, stated:

These amendments, in effect, constitute a Federal land use control act, and control over the economic and industrial development of the Nation. The "no significant deterioration" amendment may improve the quality of the air we breathe, but it surely will limit the amount of food we eat, the number of jobs available, the amount of housing that can be built. It will be deciding what can be built and where, determine how we work and live and how we travel. As such, it is one of the most destructive bills ever to come before the Congress, and the liberals think it is just great.

The Richmond Times-Dispatch, in an editorial dated April 22, 1976, soon after the committee reported the bill, commenced its views with the statement:

Seemingly acting on the assumption that man can live by clean air alone, the Senate Public Works Committee has reported a package of environmental proposals that could result in economic paralysis of vast areas of the Nation. These

measures could impede economic development almost everywhere, and halt industrial growth altogether in some sections, inevitably increasing unemployment and eroding the standards of living of countless Americans. Moreover, the proposal would thrust the power and authority of the Federal Government into some areas of concern that historically have been the provinces of State and local governments and should remain so.

Mr. BARTLETT. I rise today to speak to the nondegradation of air quality provisions of S. 3219. It is my belief that the amendments relating to nondegradation would seriously affect future economic growth, employment, domestic energy supplies, and capital availability for productive investments without providing significant benefits in air quality for the protection of the public health and welfare.

The National Ambient Air Quality Standards, NAAQS, were established to protect the public health and welfare. The proposed amendments would override the NAAQS and limit the allowable ambient air concentrations in most "clean" areas to levels well below the NAAQS and only to a small fraction of the NAAQS in some areas. I see these provisions as representing a "no growth, no win policy" for our rural areas.

Nondegradation areas are those areas where air quality meets national secondary standards for either sulphur dioxide—SO<sub>2</sub>—or particulates or both. Virtually the entire State of Oklahoma will fall in the nondegradation area category if section 6 of this bill is allowed to become law. This circumstance will certainly play havoc with Oklahoma's industrial development program. For this reason and the reasons stated above, I cosponsored the Moss amendment to delete these provisions from the bill and instead study the matter for a better solution than is proposed in S. 3219.

I am now of the belief that a step further needs to be taken if my State, and many other States, are to be able to make any significant progress in its industry-developing program. In view of this belief, I have also cosponsored the Scott amendment, which in addition to deleting section 6 of the clean air bill and calling for a study, also provides for the suspension of the present regulations under which EPA is operating as a result of the Supreme Court decision in *Sierra Club against Ruckelshaus*. I believe this is a more logical way to handle this most important, and far-reaching matter.

Both the class I and class II designations carry very restrictive allowable increments of deterioration that are, in effect, zoning regulations based not on all of our citizens' social and economic needs, but on only one need—clean air. Given this single criterion, States and local communities would be deprived of at least some of their right to decide for themselves what use they want to make of their lands. In many cases, they would want to go the way of preservation. In others, they might well want to go the way of development—and, under these provisions, not be able to.

Certainly, class I areas should be kept "pristine," and they should be protected against intrusion by airborne pollutants. I refer now to class II areas, where moderate industrial growth would be permitted, within the allowable increments. The question that arises is what happens when one facility moves into a given area and "uses up" all or most of the allowable increments. Other industries which then might want to move into the same area would find it foreclosed to them. They would have to move to yet another class II zone where the increments

still remained, even if the site might be ill-suited to a proposed plant's needs.

In the face of such discouraging prospects, it is entirely conceivable that the plant would not be built at all, and jobs would be lost. Moreover, an area with all of its increments used up might well find itself condemned to more or less permanent economic stagnation.

Surely it is the right of the several States and their local governments, long recognized by Congress, to decide how they want to use their own lands. Think for a moment about all of the cities and towns across America which are trying to attract new industries to reverse economic declines and provide job opportunities for their young people. These communities are trying to plan their economic future in a rational way. They have decided, often at town meetings, what types of industry they wish to attract and in many cases have even acquired land at great expense for industrial parks. The nondeterioration provisions could well pull the rug from under many such plans.

I am well aware of the time I was in the Governor's office in Oklahoma and was faced with the problem that my colleague in the Senate, Senator Bellmon, as former Governor, was faced with, the problem of our migration of young people, and we embarked, as he had, on a program of working in the rural areas to expand industrial development and job opportunities. We were able, over a period of time, to reverse the outward migration from the rural areas. Some of it was to the city areas in our own State, but at first the majority of it was to outside the State.

As time went on and opportunities were provided in the rural areas which had depressed economies, people remained in the State, took advantage of various training programs, and helped build up the economy. When the recession, which is just passing, first hit with fury the 50 States, it was very pleasing to see that in our State of Oklahoma unemployment was running about 3 percent less than the national average. This showed that there had been considerable progress made in opportunities for young people throughout the entire State, not only in the two metropolitan areas but also in the entire State for jobs, and enabled us to keep these young well-educated people within our State boundaries.

We had been exporting our No. 1 product, our educated, well-trained young person. But now we are retaining those people in our State.

I am concerned that, without the Moss and Scott amendments, we would be perhaps making it very difficult to continue this kind of aggressive program that bears in mind the two needs of business and industrial growth, and the preservation of our environment. I think the two can go hand in glove. Both are necessary, not one, either one rather than the other, but in my case I feel very strongly that we need both.

The problem, of course, is magnified when one considers the Western United States, where so many energy resources like oil shale and coal are located. Surely, ways can be found to protect the environment and at the same time make these vast energy reserves available to Americans. We need to appreciate the fact that the present air quality standards are very restrictive. We need to ask: What will happen when industries must operate within fractions of these standards, as the proposed significant deterioration provisions call for?

Another thought disturbs me. Under these provisions, the drift toward centralization of government would continue as communities, lacking the power to change things for themselves, increasingly would look to Washington to solve their problems.

I feel very strongly that the implications of the significant deterioration provision deserve the most careful study which, I devoutly hope, will include the land use implications involved. One year is not too long a time to carry out such study.

Because the impacts of the proposed nondegradation regulations are very complicated, and also very significant, in-depth definitive studies, which have not been made on many of the impacts, should be carefully made. However, preliminary studies on some of the effects this legislation would have on future energy supplies are as follows:

First. A sulfuric acid plant meeting EPA's new source performance standards to produce acid for the acid-leaching in a large uranium mill and with a stack height of less than 200 feet could not be located in an EPA Class II area based on  $\text{SO}_2$  emissions. This plant would also have to be located over 20 miles from a class I area. These studies did not consider other sulfur oxides from this mill, did not consider other pollutants and did assume the maximum class II area increment was available for the acid plant emissions.

Second. The proposed legislation and the ultimate regulations would seriously affect the timing and economics of development of coal deposits between now and the early 1980's and in addition the development of nuclear, oil shale, and coal conversion projects as domestic energy supplies. The impact would seriously impede our goal to develop the Nation's future energy supplies.

Third. Future supplies of gas and oil could be affected as the nondegradation regulations are extended to hydrocarbons, nitrogen oxides, carbon monoxide, and other pollutants that EPA decides are to be included as provided in the proposed legislation. Meeting these more restrictive hydrocarbons and other standards could increase the cost of gas and oil. Such standards might also restrict oil and gas production in some areas and present siting problems for new refineries and plants as well as expansions.

Many of the areas that would be designated as class I are in the Western States. Many of these same areas have the energy reserves that will have to be developed for future domestic energy supplies. The nondegradation proposals would prevent development of many alternate fuel sources to the level we need to provide greater energy independence.

The National Ambient Air Quality Standards are more than adequate for the protection of public health and welfare and more restrictive standards such as the nondegradation plan in the Clean Air Act amendments being considered are unnecessary and unjustified on environmental considerations. Such a plan could have serious detrimental impact on our Nation's growth, on employment opportunities, and on domestic energy supplies.

These consequences would certainly apply to Oklahoma. Activities in Oklahoma that could be seriously affected by these amendments are metal smelters, utilization and mining of coal, new gasoline plants and refineries, and agriculture activities that produce particulate emissions.

School buildings, shopping malls, and similar-sized facilities with heating plants of 250 million Btu's would be subject to control under the proposed act. I feel it is unconscionable for Congress even to be considering such provisions until the full consequences are measured and evaluated.

To construct new homes, schools, businesses, et cetera, a State would have to assure that the air quality impact of growth associated with the new facility would not adversely affect the EPA standards. Existing facilities would be subject to increasing penalties. One can imagine that a number of marginal industries, operating in rural areas, would shut down.

A rural area that wants to build a vocational-technical school, surely does so with the hope of attracting industry with the new reservoir of skilled workers that the school will produce. This kind of initiative on the part of a State would most certainly be curtailed if the proposed Clean Air Act amendments are enacted.

I say to the Senator from Virginia that we had such a plan when I was Governor, to have such schools throughout the entire State, so that virtually everyone—adult and youngster alike—was within commuting distance of a good vocational technical school.

As a former Governor of the State of Oklahoma, I can personally testify that one of the goals of Oklahomans is a higher quality of economic growth for its people while still respecting the environment. Oklahomans very much want to achieve both, but not one—either one—at the expense of the other. However, while this legislation is couched in rhetoric regarding the “quality of life,” it ignores the fact that a decent and satisfactory life involves more than “pristine air.”

**MR. WILLIAM L. SCOTT.** On July 20, the Staunton, Va., Leader contained an editorial entitled, “Restricts Land Use,” endorsing my amendment and concluding:

The Federal Government already exerts control over our schools, businesses (particularly through OSHA and EEOC) and elections. Should States be required to give up control of land use also?

We hope that reason will prevail. The “non-significant deterioration” policy is not needed to protect health or welfare. It should be rejected.

In a July 26 commentary, Robert F. Hurleigh, a former president of the Mutual Broadcasting System, endorsed my amendment and included this thought:

In a fine spirit of legislating cleaner air, the well-intentioned Congress has created a situation wherein the economy of many States will be stifled with resultant loss of an experienced work force. This, in turn, would lead to an eroded standard of living.

His concluding sentence is:

Senator Scott's proposals seem reasonable and fair.

Alice Widener, another syndicated columnist, in an article entitled, “Common Sense on Clean Air,” included this Statement:

The whole subject of the Clean Air Act is highly complicated, but Senator Scott has penetrated the smog. In plain English he explains that his proposed amendment “would permit construction in rural areas of the country where the air quality is higher than national standards, while still being subject to the regulations of the State and local governments and the national standards for the protection of public health and welfare.”

The last editorial I bring to the Senate's attention is entitled "Sane Approach to Clean Air Needed," from the Danville, Va., Register of July 25, 1976, and among other things it states:

If the friends of the environment will agree to listen to the opponents' arguments, they may find that America can promote industrial growth and the tapping of industrial resources without damaging the environment to the extent that they fear.

In remarks on the floor on July 27, I included letters from a number of Governors, and I do not propose to reinsert these letters at this time in the Record. However, the Governors of Florida, South Carolina, North Carolina, Alabama, Arizona, Maine, Mississippi, New Hampshire, Oklahoma, Texas, Utah, Michigan, Louisiana, Ohio, and Virginia, all indicated their opposition to nondegradation. Gov. Mills Godwin even indicated that if this legislation is enacted in its present form Virginia would feel impelled to ask the courts to set it aside as unconstitutional. I believe that the views of these Governors properly reflect the opinions of the people of the country against a no-growth policy and a desire for our economy to continue to expand for economic prosperity and for the maintenance of our standard of living while at the same time maintaining air quality on a nationwide basis high enough to protect the health and welfare of our citizens.

Mr. Moss. I have not participated in this discussion because I had thought about my amendment earlier. This constitutes an amendment to my amendment.

The reason why I did not write my amendment to go as far as the Senator from Virginia indicates is that I felt it was important at least to keep in place EPA regulations that protect health and welfare. There are some difficulties with the administration of those regulations, including the latest court opinion that just came down. I have not had a chance to examine the full opinion but have only seen it in the press.

Despite matters like that, we at least are living under and getting along under a clean air statute now that has had an appreciable effect in improving air quality in many places. I certainly am not in favor of a step so far backward that we would abandon the advances we have made.

I do not say that to indicate that I think that is the import of the amendment of the Senator from Virginia, but that is the reason I felt that we ought to keep in place whatever we have now while we have the 1-year study time. I think it effectively answers those who allege that my amendment or the Senator's amendment would suddenly plunge us back into dirty air if we abandon the clean air objective. In fact, I have been advised by others that they have been called by some organizations saying, "You cannot vote for the Moss amendment, because we will all be strangling in dirty air."

I want to make it perfectly obvious that we are not going to take a step backward. We are going to be where we are now. Section 109 of the Clean Air Act mandates that EPA promulgate standards that protect the health and welfare of the people of this country. So we are not going to step backward.

What my amendment is trying to do is say, "Look, let us hold where we are and make a study before we put permanently into law the provisions of section 6." I think that is a logical way to do.

The Senator from Virginia wants to go a step beyond that, and he has some very valid arguments. I may very well support his amendment. If his amendment should carry, that would then become part of the Moss amendment and there would be a second vote. So if it carries, I shall be very glad to go ahead and still try to get my amendment. Should it not carry, I still shall press as hard as I can for the Moss amendment.

Mr. WILLIAM L. SCOTT. As Senators in this Nation's highest legislative policymaking body, we should not take a myopic or a tunnel vision approach to legislative proposals. In my opinion, we have an obligation to consider the overall welfare of the country and its citizens. Will this bill add inflationary pressures to our economy? Will it require additional paperwork for both the Government and the businessman? Will it delay or prevent the construction of new plants, new industries, new jobs? Will it magnify our energy shortages or further restrict the use of coal, our most important fossil fuel? Will it handicap the Nation in expanding the economy and result in no growth or stagnation in many parts of the country?

Public Works has worked long and hard to report out a bill and that the House Interstate and Foreign Commerce Committee spent a year considering a similar measure. I believe that in our deliberation today, we should consider whether passage of this bill in its present form is in the national interest.

Mr. McCLURE. The only reason I rise to take part in this particular debate is to illustrate to Members of the Senate and, hopefully, to persuade some of them, that there is a distinction between the Moss amendment and the Scott amendment which compels me to view the two in quite different lights.

The Senate Committee on Public Works, as well as the committee in the other body, were confronted with a set of facts with which we must work. That set of facts included the decision in the Sierra Club against Ruckelshaus in which the court had decided that the congressional intention, as expressed in the act of Congress, was to protect the clean air areas of the country, as well as to establish primary and secondary standards. This, I think, went far beyond any understanding in Congress as to what was being done at that time, but regardless of whether it did or did not, it was the law.

Mr. WILLIAM L. SCOTT. I call attention to page 11 of yesterday's decision by the U.S. Circuit Court of Appeals for the District of Columbia. At the beginning of page 11, it reads:

As is apparent from the provisions of the Clean Air Act outlined above, prohibition of significant deterioration of air cleaner than the national standards is not an express requirement of the Act.

It goes on further and says that Judge Pratt, the trial judge, put it in under the "enhance" provision, to protect and enhance the air. So it is put in there by implication from the "purpose" clause, not the intention of the Senate.

Mr. McCLURE. That is very definitely correct, but the facts with which we were dealing at the committee—we were dealing with the regulations which EPA then had sought to put in place following the court's earlier decision, which was then tested in this case to which the Senator from Virginia has made reference. Whether it is the earlier case or this later, both or either go far beyond the primary or secondary

standards. That is the fallacy that I see in the Moss amendment, because the Moss amendment does nothing at all to solve the basic dilemma to which he addresses himself.

I have listened carefully to the arguments of the Senator from Utah and he has made a very persuasive argument against nondeterioration standards, but leaves them in place with his amendment. I do not understand the logic which says we cannot possibly live with a nondeterioration standard, but we shall leave it there.

Mr. DOMENICI. Is it not true that, with the more recent decision further interpreting the power of the Administrator under the "purpose" clause and rendering valid his present regulations, the statement of the Senator is even more true today than it was when the committee deliberated the matter?

Mr. McCLURE. I thank the Senator from New Mexico. He is exactly correct. So, regardless of how we feel about the issue of nondeterioration, we ought not to follow the blind path of the Moss amendment by simply saying that we will not adopt the committee's deliberation, we will let EPA and the courts do it, because the EPA and the courts are doing exactly what the Senator from Utah says is absolutely unbearable for us in our society today—because we do not know about it, he says.

I do not disagree with my distinguished friend from Utah. I think we do have very grave difficulties in applying a significant nondeterioration standard when we do not have as many facts and as much information as we would like to have. But the committee was faced with the indisputable fact that the court has said this has been mandated by Congress. So we attempted to deal with that in this committee bill by establishing standards, by setting guideposts, by alleviating a great deal of the uncertainty that was imposed by the original court decision. In my judgment, the bill that has been presented by the committee is an improvement over the existing law, the existing law as established and interpreted and applied by the courts and by the EPA.

Mr. DOMENICI. Which laws and which regulations are left wholly in place by the Moss amendment, is that correct?

Mr. McCLURE. That is exactly correct. If you do not like deterioration, you ought to vote for the Scott amendment. If you think we do not know enough about nondeterioration and the effects on our economy, then you ought to vote for the Scott amendment because it does something about it.

Mr. McCLURE. I do understand that there is a problem with non-deterioration. I do understand that we are not certain what the base levels of pollution are. I do understand that there is a great concern about the State-Federal relationship, and I would like to say a very great deal more about what we have done in this bill to improve that. But if we do not believe we ought to move in that area at all, if we are not prepared now to deal with that question at all, then vote for the Scott amendment. Do not take the Moss amendment by itself, bare, without any description of what we intend, without any guidelines to EPA as to what ought to be accomplished, without any definition of the distinction between the State and Federal roles.

If you do not want to move toward nondeterioration, then vote for the Scott amendment. If you do believe that we are prepared and we must act in this field of nondeterioration, then vote against both. But

do not vote for the one that leaves us in that no man's land with no resolution, no improvement, no guidelines, leaving it all to the courts and to the EPA. I think that would be the worst of all worlds.

Mr. BUCKLEY. I want to reinforce what the Senator from Idaho said. The Senator is giving us an honest choice: Either you believe in nondegradation or you do not. But if you do not support the position of the Senator from Virginia then the committee bill comes closer to his objectives than the Moss amendment. The committee bill increases and enhances the authority of the States in making the critical decisions as to future development. So it is either the Scott amendment or the committee bill.

Mr. WILLIAM L. SCOTT. Let me very briefly review the decision of the Court of Appeals for the District of Columbia, the case that was decided yesterday, 14 cases combined on this very question.

On page 11 it states that Judge Pratt held that under the purpose clause you could not significantly deteriorate air quality anywhere in the country regardless of how high that quality of air was, and whether it was still above the national standards.

Pursuant to this court order, the administrator reviewed and disapproved all State plans insofar as they failed to provide for prevention of significant deterioration.

That means, you cannot build in a rural area a plant where the principal business of a particular area is tree farming. If there is no deterioration, no pollution at all, and someone wants to put a factory or plant in this region that would significantly deteriorate the air quality, but it would still be far above the quality required to meet the national standards, why, the administrator could not approve that plan, according to page 11 of yesterday's decision.

Now, I believe it is essential for the welfare of this country that we have a healthy economy. I believe it is essential for maintaining our standard of living that our economy continued to grow and continued to expand. I believe the distinguished Senator from Utah, with his amendment, has taken a step in the right direction. But without doing away, suspending, the regulations of the EPA as well as the statutory law, his amendment has no practical effect at all. It is a mirage, it is just something that appears to be doing some good but it does not.

If my amendment is added to it then we will still have the primary and secondary air quality standards established by the administrator of the Environmental Protection Agency high enough to protect the health and welfare of the people of the country. We will leave to the States and to the local government the authority to require higher standards to meet local conditions.

I ask for the yeas and nays on the amendment.

The yeas and nays were ordered.

Mr. BUCKLEY. I urge the defeat of the Scott amendment, as I will urge the defeat of the Moss amendments.

Adoption of the Scott amendment would eliminate any Federal protection of air quality values of our national parks and wilderness areas.

I believe our Nation has a duty to "protect and enhance" the quality of our air to protect clean air that is already clean, and to enhance air that is found to be dirty to a degree that it endangers public health.

There are many reasons for a program that will prevent uncontrolled pollution up to the national standards. We need it to allow for future growth, trying to prevent one big polluter from preempting all the air for future time. We need it to protect against costly retrofitting of pollution control technology if new evidence shows the health standards must be tighter or that new sources want to build nearby. We need it in order to pass on to our children a nation where some respect is given to pollution control, not simply industry growth.

For these reasons, I urge the defeat of the amendment offered by the Senator from Virginia.

The PRESIDING OFFICER. The question is on agreeing to the amendment of the Senator from Virginia. The yeas and nays have been ordered.

Mr. ROBERT C. BYRD. I announce that, if present and voting, the Senator from California (Mr. Tunney), would vote "nay."

Mr. GRIFFIN. I announce that, if present and voting, the Senator from Nebraska (Mr. Curtis) would vote "yea."

The result was announced—yeas 17, nays 74, as follows:

[Rollcall Vote No. 454]

YEAS—17

Allen	Garn	Scott, William L.
Bartlett	Hansen	Stennis
Brock	Helms	Stevens
Byrd, Harry F., Jr.	Hruska	Thurmond
Eastland	Laxalt	Tower
Fannin	McClure	

NAYS—74

Abourezk	Glenn	Moss
Baker	Gravel	Muskie
Bayh	Griffin	Nelson
Beall	Hart, Gary	Nunn
Bellmon	Hartke	Packwood
Bentsen	Haskell	Pastore
Biden	Hatfield	Pearson
Brooke	Hathaway	Pell
Buckley	Hollings	Percy
Bumpers	Huddleston	Proxmire
Burdick	Humphrey	Randolph
Byrd, Robert C.	Jackson	Ribicoff
Cannon	Javits	Roth
Case	Johnston	Schweiker
Chiles	Leahy	Scott, Hugh
Church	Magnuson	Sparkman
Clark	Mansfield	Stafford
Cranston	Mathias	Stevenson
Culver	McClellan	Stone
Dole	McGee	Taft
Domenici	McIntyre	Talmadge
Durkin	Metcalfe	Weicker
Eagleton	Mondale	Williams
Fong	Montoya	Young
Ford	Morgan	

NOT VOTING—9

Curtis	Inouye	McGovern
Goldwater	Kennedy	Symington
Hart, Philip A.	Long	Tunney

So Mr. William L. Scott's amendment to the Moss amendment was rejected.

UP AMENDMENT NO. 290

Mr. Moss. This amendment simply says, "Let's leave everything in place where it is now."

Section 109, which mandates EPA to fix standards that will protect the health and welfare of the people of this country, leave that in place, do not disturb it, but do not lay another statute on top that changes the degradation standards and other standards to be met until we have had a study that will tell us what that is going to do. We want to know not only what it will do to our air, we want to know what it will do to our lands and our cities, our production of energy, and all.

I am told, for instance, that the lung association is calling Senators about the Moss amendment and saying it is simply a dirty air amendment.

I deny that. As a matter of fact, the regulations will not deteriorate at all. They will stay right where they are if the Moss amendment passes for a year, while we have our study and the Clean Air Act remains in force.

The issue is not a clean air or dirty air issue; it is more a growth or no-growth issue. I simply ask, why should we legislate blindly?

I pointed out that up until 2 or 3 days ago there had been no indication publicly as to where the President of the United States stands on this matter, and so I presented to this body an article written by a correspondent for the *Deseret News*, in an exclusive interview with the President, in which the President stated his position very clearly.

Mr. White, who wrote the article, in summarizing what the President was for and against, said:

The President favors an amendment which would delay for a year the new stricter provisions of the Clean Air Act.

And in a later paragraph, he writes:

Ford said a legislative proposal by Senator Frank E. Moss (D.-Utah), to put off new stricter Clean Air Act amendments for a year, is a good one. "I am sympathetic with the Moss amendment. I believe that the significant deterioration issue requires more study, and I think the Moss amendment would give that time."

All we are saying is, "Of course we want clean air. We want the cleanest air we can possibly get in every part of this country."

But the provisions of section 6 will fix into law certain areas and certain standards that will not then be changeable unless we come back and legislate again. My amendment simply says: Let us not do that. Let us leave what we have in place now, keep all the protection we have now, but let us have a study. And I mean a full-length study that goes into many factors that I read into the Record the other day. That is what it is all about.

The map was discussed in the Chambers, and I was hoping that there would be more Senators present when we discussed the map. I found that was not possible. I discussed it, and Senators can read that discussion in the Record tomorrow, but they will not hear the discussion, at least from me, before the vote. That is simply the way it has worked out.

Mr. MUSKIE. Let me say two things that I understand about the Moss amendment, and I do not think that they are inaccurate statements.

First of all, he proposes a study as a condition to any further action on the part of Congress or the Environmental Protection Agency under existing law doing anything about the clean air areas of our country, and he has said over and over again that there have been inadequate studies.

On May 26, 1976, I had printed in the Record some facts with respect to the time the Subcommittee on Environmental Pollution has put in in studying this problem. I also included in considerable detail, that took, I think, three full columns in the Record, the studies that have been developed by the Environmental Protection Agency because, Mr. President, under the mandate of the courts, the Environmental Protection Agency held rulemaking hearings all over this country before developing EPA's nondegradation regulations. It is on the basis of that kind of foundation that the U.S. Court of Appeals upheld EPA's regulations. And what did the court say? Let me read this significant paragraph.

It was a rational policy decision that the significance of deterioration of air quality should be determined by a qualitative balancing of clean air considerations against the competing demands of economic growth, population expansion and development of alternative sources of energy. The approach provides a workable definition of significant deterioration which neither stifles necessary economic development nor permits unregulated deterioration to the national standards. We, therefore, find that EPA acted within the discretion it is granted as matters of policy in choosing this design to prevent significant deterioration of air quality.

If EPA's regulations are a reasonable exercise of the authority provided by current law, it follows that the committee language is even more reasonable from the point of view of those who are concerned about economic growth, population expansion, and development of alternative sources of energy.

Let me direct the Senate's attention to another map in the back of the room. The red areas of the map are the only areas that are required to maintain what anyone might define by any terms pristine air quality. Those are the existing national parks and wilderness areas in excess of 5,000 acres which are included as the class I areas, and even as to them under the standards of the committee bill that air quality may be reduced if the air quality values of those regions are not jeopardized by that kind of a decision. So even as to them the committee bill is less restrictive than EPA's regulations, which were upheld yesterday by the circuit court of appeals.

Mr. DOMENICI. The Senator is making the point that under the present legal, valid EPA no-significant-deterioration policy there is no flexibility in those red areas under their very regulations that one has to follow on the modeled increment, and that is no flexibility. Ours even has flexibility there. Is that what the Senator is suggesting?

Mr. MUSKIE. That is right. Under EPA's regulations, if there is a source outside those areas, no matter how distant, which intrudes upon them and would cause degradation to the standards set in the bill, they would be prevented, and it is for that reason that we have seen all these buffer zone maps for the last 9 months.

Mr. RANDOLPH. Yes.

Mr. MUSKIE. We have seen all these buffer zone maps for the last 9 months which have no relevance to that new map that has been put up on the floor, absolutely none. It is EPA's regulations, those which

were sustained by the court yesterday, which are the basis for the buffer zone maps.

Mr. RANDOLPH. That is right.

Mr. MUSKIE. And that is as clear as can be to anyone who has read the hearings or followed the development of this legislation.

Second, all the white areas on this map are to be defined by the States who are mandated under the committee bill to identify the areas which are not meeting national ambient air quality standards and by definition the other areas which are cleaner than national ambient air quality standards. Until the States have done that job, no one can draw a map more defined than that one, and that map which was on the floor before I arrived in the Chamber this afternoon is such a map. It comes out of someone's daydreams because under the committee bill air quality regions, and by definition clean air quality regions, are to be defined under a process which gives the initiative to the States to establish those designations. So that map is the only map that is relevant to the discussion of nondegradation.

What the Moss amendment would do is not suspend the committee nondegradation provisions but kill them, because in order to reestablish a nondegradation provision if the Moss amendment were adopted, we would have to go through the whole legislative process all over again. Legislation would have to be introduced, committee hearings would have to be held, legislation would have to be reported to each body of Congress and enacted by Congress. The Moss amendment does not suspend anything. It kills it. And leaves in place what? It leaves in place the EPA regulations which the circuit court of appeals yesterday upheld as valid, notwithstanding the pleas of both industry and the environmentalists.

Let me make another point about that. The environmental groups challenged EPA's regulations for what reason? It was for a number of reasons but, among other things, because EPA's regulations cover only sulfur oxides and particulates, and the environmental groups think we ought to cover the other four major pollutants as well.

I do not know how that circuit court of appeals case ultimately is going to be decided by the Supreme Court, but it is going to be appealed by both industry and the environmentalists.

What, I ask Members of this body, will be the attitude of the supporters of the Moss amendment if, on a final judicial determination, the environmentalists win their case? What then? We may have four more major pollutants further restricting the potential for economic development and growth, and we may have some stricter guidelines than those that the circuit court of appeals applied to EPA's regulations yesterday.

The committee bill, in contrast, eliminates that uncertainty, eliminates those unknowns, eliminates those doubts. It is for that reason that 91 witnesses in behalf of industry urged EPA to defer its regulations so that congressional policy on nondegradation could be further clarified. That is exactly what we have done.

The court told us yesterday that this was not an antigrowth provision. This is a growth provision. The nondegradation provisions of this bill permit the construction of a 1,000-megawatt powerplant. That is bigger than anything we have in my State. Is that a no growth policy? Powerplants are the principal contributors of sulfur dioxide

and particulate emissions. If a thousand-watt powerplant can meet the standards of this bill, what other source could raise a reasonable objection to this standard?

It is not that these provisions restrict growth. On the contrary, they make it possible for the future growth of this country to take into account, in an orderly and constructive way, not only economic growth, population expansion, and alternative sources of energy, but clean air considerations as well.

I have faced the ranks of opponents to clean air legislation since 1963. Led by the utilities of this country, they have opposed environmental legislation through all that time.

They do not want to suspend these regulations. They do not want to suspend EPA's regulations. They want to kill them. They want to have as much right to invade the public interest in clean air and clean water as they had for the last 200 years. That is what they want. Regardless of the consequences, they want to pioneer the empty areas of this country until they are as dirty as anything else.

I have heard Senator Moss and Senator Scott ask, Why are not the national primary and secondary ambient air quality standards good enough? I will indicate why they are not good enough. It is because they are the minimal standards that we could insist upon in the dirty areas of this country. It is not that they are sufficient by all standards, all measures of the public interest. Not at all.

So I take it, by implications, from what Senator Moss and Senator Scott have said, that they would be satisfied if the standard in every square inch of this country were the national primary and secondary standards.

Well, that was not good enough for this committee, which voted unanimously for this provision. When we have Senator McClure on one end of the political spectrum of this committee—and I will not pick anybody but myself at the other end, lest I hurt somebody politically—but when we consider the range of political philosophies represented in the Committee on Public Works, and they supported this unanimously, and the more conservative members of the committee have been among the most ardent and vigorous and enthusiastic proponents of the committee provisions, there must be a reason. The only reason I can suggest is the reason well reflected in the language in the court's opinion yesterday.

We did not all agree in committee. Some of us wanted stricter standards than those contained in this bill. I cannot recall anybody who wanted anything that would have deliberately weakened the bill. It was a matter of judgment.

The increment approach is simply a device for enabling State and local governments, under the jurisdiction of EPA, but with the initiative clearly left to States, to plan for the orderly growth of their economies, so that they do not again produce for this country situations such as those in Los Angeles, Washington, D.C., Chicago, Boston, and many others that I could define.

Mr. RANDOLPH. To reemphasize what the Senator has just said about the State of Maine under the provisions of this bill, construction of a 1,000-megawatt powerplant would be permitted. Is that correct?

Mr. MUSKIE. That is right.

Mr. RANDOLPH. The Senator said that in Maine there was nothing of that size. In the State of West Virginia, we have some rather large plants. But there is none that is more than about half that size.

Mr. MOSS. I have listened with interest to the presentation of the floor manager of the bill, the Senator from Maine, and I noticed that he placed tremendous emphasis on the fact that this was unanimous. In fact, as I recall, he repeated that again and again.

I have before me the committee report on this bill and I find that in the committee report, individual views were filed—these are separate individual views—by Senators Randolph, Muskie, Montoya, Gravel, Bentsen, Morgan; then Senators Baker, Buckley and Senator Stafford joined in expressing their views; then Senator Buckley and Senator Stafford put in some other individual views; then Senator McClure, Senator Domenici, and Senator Hart.

Each had individual views.

Mr. MUSKIE. Individuals views are not necessarily dissenting views.

Mr. MOSS. I did not say they were dissenting views.

Mr. MUSKIE. The vote was 13 to 1 on reporting.

Mr. MOSS. I am not challenging that.

The Senator said the committee was unanimous.

Mr. MUSKIE. I mean on this provision.

Mr. MOSS. The committee may have voted finally to report the bill. However, if we are talking about great unanimity, why in the world did every Senator on that committee feel he had to register his individual views? That is the point I am trying to make.

I think the Senator, himself, in discussing this matter, pointed out—in fact, I will quote him from the Record of Tuesday. He said:

As a matter of fact, the whole area of environmental pollution is replete with uncertainties because of our dynamic, ongoing, involving industrial society, so that we can never have a status quo we can measure in its dimensions.

It seems to me, that that is really the basis that we who favor the Moss amendment are talking about. We are playing with uncertainties.

Does that not argue for having a full, complete study of this matter before we go forward?

The Senator from Maine pointed out that a certain number of hearings were held and that there had been a number of studies on this matter before the bill was written. Well, those that were had before there was any section to write a study about probably did not have much relation to what they had. Consequently, what we need now is to have the commission in place, with the expertise it has, answer the questions that are laid down specifically in the Moss amendment, that have to be answered before we decide what we can write into law, that will then be difficult to change once it is in the law.

The EPA regulations that were upheld yesterday to which the Senator referred had the safety valve of a class III area. The present Senate bill would abolish that safety valve of a class III. That safety valve was part and parcel of the reasonableness of EPA's present regulations.

How does the Senator cite this point as support for its abolition here? What I wanted to hold onto in place is what the court has found reasonable at this point. I say that we are not taking a step backward. We are saying, from here, let us not go any further; let us take what

we have in place now. The powers of the EPA remain in place, and then, after the study is complete, in a year's time, we shall then know.

I suppose one of the great faults of the legislative body, and any that is as busy as the U.S. Senate, is that we do legislate without having all the facts at hand. We ought to do everything we can to overcome that deficiency. In this case, we ought to do it by mandating the study, mandating that it be made.

I also wanted to comment that the Senator indicated that some 91 industry witnesses came in and testified for the bill, but I would also like to point out that the members of the National Construction Industry Council joined in a statement supporting the Moss amendment. This includes a long list of very prestigious national associations—the American Concrete Paving Association, the American Consulting Engineers Council, the American Institute of Architects, the American Institute of Steel Construction, the American Roadbuilders Association, the American Society of Landscape Artists, the American Subcontractors Association, the Association of Builders and Contractors, the Associated Equipment Dealers, the Associated General Contractors of America, the Associated Landscape Contractors of America, Ceilings and Intersystem Contractors, Concrete Reinforcing Steel Institute, the Council of Construction Employers, and the Mechanical Contractors.

As the Senate can see, that is about half of the ones that I have read so far, including, I might say, the National Association of Home Builders. All of them said, "Let us not lock this in until we have a study. That is what we think we ought to have, because we are dealing not only with clean air; we are dealing also with economy, energy, the place where people live, the lifestyle that we have. Let us know the answers to that before we lock it in."

Mr. ALLEN. The Senator from Maine has stated that the power that EPA now has to forbid degradation of the environment is greater than it would have under the provisions of this bill—under section 6, that is. If that be true, why does he object to retaining in EPA this greater power that it now has and not, at this time, put in section 6, which is, according to him, a limitation upon the power of EPA?

It is less restrictive, he says, than the present law, the present power of EPA. If that be true, let us leave EPA with this greater power that it now has, greater than is provided in section 6, and then, let us study, under this commission provided by the Moss amendment, the very questions raised in the Randolph amendment—and there are plenty of questions raised.

I ask unanimous consent to insert, as questions to be studied by this commission under the Randolph amendment, sections (A) through (F) of the Randolph amendment as showing the areas that needed to be studied—according to the Randolph amendment, while section 6 is put in, but under the Moss amendment, before section 6 is put in.

In carrying out the authority of this subsection the Commission shall study, among others, the following:

"(A) whether the provisions relating to the designation of, and protection of air quality in class I regions under this Act are appropriate to protect the air quality over lands of special national significance, including recommendations for, and methods to (i) add to or delete lands from such designation, and (ii) provide appropriate protection of the air quality over such lands;

"(B) whether the provisions of subsection (g) of section 110 of this Act, including the three-hour and twenty-four-hour increments, (i) affect the location

and size of major emitting facilities, and (ii) whether such effects are in conflict or consonance with other national policies regarding the development of such facilities;

"(C) whether the technology is available to control emissions from the major emitting facilities which are subject to regulation under subsection (g) of section 110 of this Act, including an analysis of the costs associated with that technology;

"(D) whether the exclusion of nonmajor emitting sources from the regulatory framework under this Act will affect the protection of air quality in class I and class II regions designated under this Act;

"(E) whether the increments of change of air quality under this Act are appropriate to prevent significant deterioration of air quality in class I and class II regions designated under this Act; and

"(F) whether the choice of predictive air quality models and the assumptions of those models are appropriate to protect air quality if the class I and class II regions designated under this Act for the pollutant subject to regulation under subsection (g) of section 110 of this Act.

Mr. ALLEN. Let us leave EPA with this great power that it has and let us study and see whether it needs to retain this great power or whether some less power is given to EPA. I do not regard this as being less restrictive than the present power of EPA. The proponents of the bill say, "Yes, section 6 is less restrictive." I do not believe that.

There is another point that I want to take issue with the Senator from Maine on. He said that certain industries—I believe he spoke of the utilities—want to kill the EPA regulations. If there is any indication of that in the Moss amendment, I do not see it. It does not strike out any present power of EPA. It leaves EPA with all the powers that it now has, but it says, let us not put in those more restrictive or less restrictive—depending on who is talking—let us not put in these measures until we have had a study to recommend to Congress what added or what less power should be given to EPA in the field of nondegradation. The Moss amendment, far from killing EPA's power, leaves it with every single bit of power that it now has; so how is that trying to kill the EPA regulation? It retains it.

The distinguished Senator from Maine says that the bill is less restrictive, so it would seem to the Senator from Alabama, according to the statement of the Senator from Maine, that he is seeking to weaken the power of EPA; whereas, the Moss amendment would allow EPA to retain all of its present power and then have a study by the Commission to determine what the policy of the Congress should be in this regard. After the study, we could legislate.

What is the use of legislating and then studying? It is getting the cart before the horse. We ought to study and then, in the light of that study and the recommendations of the Commission, we should legislate.

One of the points that the Randolph amendment called for a study on is in connection with the implementation of section 6 of the bill—let us listen to this. This is what it is supposed to study.

(C) whether the technology is available to control emissions from the major emitting facilities which are subject to regulation under subsection (g) of section 110 of this Act—

That is another way of saying section 6—

including an analysis of the costs associated with that technology.

So apparently, we do not even know the present state of our knowledge on this subject which is such that we do not even know whether the technology is available to control emissions from the major emitting facilities which are subject to regulation under this section. I would say we ought to find that out before we legislate.

Five other areas of study are called for here in the Randolph amendment. I suppose any commission would want to study these very same subjects. I do not think it is peculiar to the Randolph amendment. I am sure the commission under the Moss amendment would make the same study in these areas.

Apparently we know practically nothing about this subject, yet we are legislating in the blind. So I believe the Moss amendment is a sound amendment and, apparently, it would retain the higher power that EPA now has and would not change that until a study has been made indicating the changes that should be made.

But the proponents of the bill say that EPA has more power now than they would have under this bill. So why weaken EPA's power? I would not think the advocates of the clean air amendments would be seeking to make EPA less powerful in this area, and that is exactly what they say they are doing. Yet they have the temerity to say that those who are opposing these amendments are seeking to kill EPA regulations. Well, it is just contrary, it would seem, because the Moss amendment keeps EPA at its present power.

The proponents of this bill say that section 6 will be less restrictive than EPA is now able to mandate.

MR. BUCKLEY. I must oppose this amendment, which seeks to eliminate the Senate provision defining significant deterioration. This issue involves a set of specific numbers—the “increments” listed in the bill—that was developed by the Environmental Protection Agency following extensive study and hearings across the country. These increments, included in regulations in effect for more than 18 months, apply everywhere the air is cleaner than ambient standards now in effect. The significant deterioration numbers in the bill have no effect at all—and this procedure has no effect—in other areas of the Nation.

A major concern of mine is my belief that the Senate must resolve this issue, moving it out of the courts and into the hands of the States. We have produced a reasonable solution to do this.

Under court order, the Environmental Protection Agency on July 16, 1973, published a notice of intent to publish regulations on significant deterioration. This was followed with EPA hearings around the Nation. A year later, EPA published proposed regulations, with final regulations issued on December 5, 1974. Thus, for a year and a half, significant deterioration regulations have existed. Industry has lived under it, with no noticeable, adverse impact on economic growth. The major change in this bill is that the regulations are given specific, legislative sanction, and control of the significant deterioration is shifted from EPA and the courts to the States.

Whether we maintain the status quo or adopt the provisions of this bill, potential pollution from a proposed new major industrial source would be studied and projected to determine if the new facility is likely to exceed the allowed increase in air pollution. How burdensome is this process? It means that the owner of the new facility may have to monitor the air in the area of the plant to determine what pollution exists there now. This would establish the “baseline” against which the increment will be measured. Then the proposed source must show, to the satisfaction of the State, that it will not violate the specified increments in the bill—the same increments of growth in the EPA regulations. That seems to me to be a reasonable demand to place on the

types of major facility we are covering in this provision, which only covers specified categories of major industrial sources.

**So the process is not burdensome. How burdensome are the specific limitations? Delmarva Power concedes that—**

A plant as large as 2,000 megawatts could be built without violating the general numbers. According to a study by the Federal Energy Administration and the Environmental Protection Agency, the increments allow construction of a 1,000-megawatt-power plant "unless the surrounding terrain within three miles was at least 500 feet above the top of the plant's stack.

If the surrounding terrain is at or below the top of the plant's smoke stack, the committee language allows "the siting of a 1,000 megawatt powerplant that meets New Source Performance Standards by the use of low sulfur coal," the FEA-EPA report stated. The analysis also indicate that plants producing as many as 5,000 megawatts of power could be built, if scrubbers are used.

The average size of new electric powerplants is presently 800 megawatts, far less than any of these figures. The Nation's largest existing electric powerplant is, I understand, the Navajo Powerplant at Page, Arizona. It produces 2,250 megawatts of electric power. Thus, according to the FEA-EPA study, our class II numbers could allow construction of plants twice as large as the largest one now in existence.

That does not sound to me like a no-growth provision.

What about other industries? Most of the studies have focused on powerplants. That was because these studies have shown that powerplants would be the one most affected by the requirements of no significant deterioration. If a large powerplant can be built at a specific site, virtually any other major industrial facility will also be able to locate there.

The pulp and paper industry has argued that its needs have been ignored. But nearly all of the effects of a kraft pulp mill relating to significant deterioration involve the generation of power. Thus the studies of powerplants easily are transferable to a study of kraft pulp mills.

One aspect of the Senate's definition of significant deterioration is the protection provided for a few specific areas—national parks and national wilderness areas over 5,000 acres in size. The test established by the bill involves an analysis of the effects of the potential pollution on park values. It is not a specific test against any specified numbers other than the fact that the proposed plant must meet the regular so-called Class II increments, which I have already discussed. Thus, the Senate bill contains no buffer zone of 100 miles radius or 50 miles or even 5 feet. Each decision is based on a case-by-case analysis involving the Federal Land Manager and State.

There are a variety of other options to scrubbers, such as coal cleaning of "beneficiation" to reach the same level of control. A paper presented by Stephen Baruch, Environmental Projects Manager of the Edison Electric Institute, stated:

The advantages of coal beneficiation are that the process is available and commercially acceptable: it concentrates carbon in the clean coal thereby increasing its heating value; it reduces concentration of trace elements, and the product has more uniform ash, moisture and BTU content.

I believe it is clear that the Senate provision is a reasonable approach. It will produce major improvements in pollution control at a

reasonable capital cost. It is a sound investment for our future. And the maps displayed by the Senator from Utah notwithstanding, it permits orderly economic growth.

We have heard a great deal of talk in recent hours and days about increments and charts and maps. Is my projection right or is yours? Whose map is correct?

I would like to put that question aside, because it is not relevant to the Senate's provision relating to no significant deterioration.

First, it is clear that a great deal can be constructed under the Senate class II increments. We have studies from EPA and others that show that well designed powerplants as large as 5,000 megawatts can be built and still meet the class II increments. That is twice as large as anything now in existence in this country.

But if you were to ask me whether a particular plant can be built at a specific location, I cannot give you an answer, yes or no. To a great extent that is what this bill is all about. This bill creates a framework allowing local people—rather than the Federal bureaucrats—the opportunity to make that decision.

The committee's no significant deterioration language is essentially a preconstruction review process that effects the very limited number of major industrial sources. It is a process, to a degree greater than has existed to date, that will bring the public and local governments into the decision of whether or not a particular plant will be located at a particular site, and what degree of technology will be used to control emissions from that source. It is a process that allows local people to decide what they want: one big plant, or five little plants, no growth, or whatever. The committee bill does not prejudge that decision. It creates a framework for that decision.

By establishing a process of public hearings, together with analyses of potential pollution impact, this bill encourages local governments and the people of the area to make the choice they have every right to make.

There are those who say industry should be unfettered in its decisions on where and how to build new sources. In its broadest sense, I support that philosophy. But I also believe that the public has a right to know what effects can be expected from the location of a new major pollution source. Just as the power to tax is the power to destroy. The American public has every right to participate in decisions on where these sources of pollution will be placed, and how they will affect the health, welfare, and esthetics of the area.

For that reason, I urge acceptance of the committee program to prevent significant deterioration of air quality.

As a brief closing remark, I would like to reiterate for, I guess, the 16th or 18th time, certain truths about the situation confronting us.

The committee bill does nothing new. It does not change the basic situation, as it has existed since the Ruckelshaus decision.

What we are doing is inserting a degree of certainty, so that business may go forward with plans in the cleaner areas of our country, knowing the ground rules by which they may develop.

There is ample testimony, as the Senator from Maine pointed out, that you can have large power developments without exceeding the limitation imposed by our bill.

Second, one of the points we have heard from the Senator from Utah (Mr. Garn) and the Senator from North Carolina (Mr.

Helms) is that Governor after Governor after Governor wants to restore greater authority to the States, so that States—not EPA and not the courts—will have control over the economic development of their own areas. Well, this is precisely what this bill does. It shrinks the authority of EPA, and transfers the critical decisionmaking responsibility to the States so that a State may determine for itself what kind of industry it wants. It can decide if it wants to have one or two major facilities or whatever within the available increments established under this legislation.

Finally, it is argued that we should not lock in the situation, pending the results of the study. Well, the reason the committee has maintained a study, a study that will be more focused with the Randolph amendment, is that we are dealing in a constantly developing situation. It is prudent that we have an ongoing process by which we may periodically review where we are, and decide how we might amend the legislation in order to achieve with greater precision the goals we have set for ourselves, as a Nation.

It is contemplated, of course, that we will come back to the drawing boards when that study is completed. There is no reason in the world why we should not take the opportunity we have now, based on over a year of intensive work by this committee, to fix in law certain of those principles that, in fact, are now operating by virtue of regulations issued by EPA.

The clean air legislation has two objectives: One is to clean up those areas in which we have pollution that is dangerous to health and to other important qualities that we value. The other is to make sure that where we have cleaner air, we do not repeat the process we are trying to correct in other areas of the country. We need to have a policy that enables us to move prudently with our economic objectives, while not fouling our nest. This is precisely what this legislation does.

I urge the defeat of the Moss amendment.

Mr. DOMENICI. I would like to address several remarks to the Moss amendment. Although the bulk of my opening remarks addressed Senator Moss' proposal, from what I have heard in subsequent debates, I feel several of the points bear repeating.

First, the study proposed by Senator Moss is a sham. After having reviewed the scope of the study cited in the amendment, I believe it safe to say that an effort of this magnitude is impossible to conduct in a professional manner within 1 year. The analogous National Water Quality Commission study took over 3 years. The Committee on Public Works has been told by the Department of Transportation that it will take 2 to 3 years to determine the impact on the railroads of the construction of a new navigational lock at Alton, Ill. on the Mississippi River. Against such a background, it is almost an affront to the Senate's collective intelligence to propose that the list of investigations cited in the Moss study could be conducted within a year. If we were being candid, I believe we would have to admit that it will take 6 months to pick a director and a staff.

My other objection to Senator Moss' study proposal is that it inherently flawed. A major premise in the study rationale is that the current state of the art of air quality diffusion modeling makes the studies the committee has relied upon unreliable. However, even if one grants this contention, what is Senator Moss' solution. Does he offer to use different modeling techniques? No.

Does he offer to gather data based on real world experience? No. All the Moss amendment offers us is another study employing the same flawed modeling techniques. This hardly presents a convincing case for the committee to suspend 16 months of effort. Moreover, the committee's efforts were not formulated in a vacuum but rather were built upon several years of hearings and analytic work done by EPA in promulgating its nondeterioration regulations.

If we are looking for a model upon which to base our efforts, the National Air Quality Commission provided for in the Senate bill appears more appropriate. The Commission, during its study of non-degradation, will employ data derived from the actual workings of the law. Such real world feedback can then serve as the basis for making future modifications in the law.

The Moss amendment states that because of our ignorance we need more study. But his study has all the real world relevance of counting angels on pinheads. A serious effort to understand the impact of non-degradation would not fear the present Senate bill, but rather embrace it as the first step in gathering knowledge on how our environmental values can be protected. The Moss amendment has its origins not in intellectual curiosity, but obstructionism. It is designed not to foster knowledge, but to retard it. Accordingly, it is an environmental Trojan horse that should be categorically rejected by the Senate of the United States.

#### RATIONALE FOR NONDEGRADATION

There is one oversight in the present debate on nondegradation that I believe should be corrected. This is that the rationale for nondegradation has many facets, and is not dependent upon a single line of argument. This has been obscured by the debate over the adequacy of the secondary standards.

For New Mexico, the importance of a nondegradation policy does not hinge on the validity of the secondary standard alone. Eliminating the threat of economic coercion is equally important. New Mexican officials have repeatedly stressed that without a strong Federal nondegradation policy they fear they would be forced to sacrifice environmental quality in negotiating for new industry. The committee's nondegradation policy provides a Federal umbrella for States that are pursuing a policy of orderly economic growth. With such a Federal umbrella in place, States are free to impose reasonable environmental restrictions without fear that a sister State will steal new industry from them by sacrificing environmental restraints.

I surface this point to stress the multifaceted basis of nondegradation. Other States may have their own individual reasons for supporting nondegradation. Some may be concerned over the fate of those industries, such as the tourist industry, which are bedrocked on environmental quality. Some may be concerned that they are producing electrical energy that is exported to other States. Under such circumstances, the producing State is left with the pollution while the receiving State gets the electricity. New Mexico, for example, exports 65 percent of its electricity. Examples such as these only demonstrate that support for nondegradation has a variety of components, and that its legitimacy as a national policy rests on more than a single

argument over the adequacy of the national ambient air quality standards.

I have a number of additional things to say. I am going to try to address them mostly with respect to the nature of the argument made by those who favor the Moss amendment.

Let me say at the inception for the Members of the Senate who are interested in whether or not a committee and the committee structure works in the U.S. Senate, and are looking for the reasons for each Senator writing his thoughts in this report, the fact is that the committee structure worked in this case.

The reason why Senators Buckley, Baker, McClure, Stafford, and Domenici on the Republican side indicated their concern in this report is that they worked on this bill.

This is not a bill that is the product of a subcommittee made up of one or two members and the staff. This is the product of 14 months, innumerable hearings, well over 70 markup sessions, drafts, redrafts. We have arrived as a committee of this institution, at the conclusion, that, first, as a committee we wanted a policy for this Nation of no significant deterioration.

Second, we arrived at the conclusion that we did not want EPA under a court mandate interpreting a preamble to the Clean Air Act to implement in a detailed manner this policy of nondegradation.

How many U.S. Senators take this floor and criticize the bureaucracy of the Federal Government for the way it carries out the intent of our acts? We saw in the EPA's regulations with reference to a no-significant-deterioration policy, a congressional abdication.

We saw them establish under court mandate, with only a couple of words in a preamble, a policy of no significant deterioration for this land and, after all those hearings, after hearing the witnesses, we concluded that if we were going to have such a policy, and we unanimously supported it, the Congress ought to be the principal drafters of what made up that policy for this Nation.

So for those Senators who are in doubt as to what we are voting, it is very simple. We are voting as to whether or not we want a no-significant-deterioration policy for this country drawn, and administered, in almost every detail by an administrator, or do we want one that comes from the concerted, collective, committee effort with the kinds of Senators whom I have described on our side of the aisle having the input, from our chairman to Senator Muskie with all shades of Senators in between having drafted it for this institution.

That is the issue. If we vote "Yes" for Senator Moss, we want Mr. Train to develop that for us with no guidelines.

Mr. DOMENICI. If we vote against it, we vote for this kind of input for the legislative process.

Mr. McCLURE. Let me state at the outset what I understand the issue to be, or, perhaps better, what it is not.

The issue is not whether we are going to have nondegradation. The issue is not whether or not the Senate is going to decide to have a nondegradation policy. The Senate has already decided that.

The Senate voted against the Scott amendment which would have settled that issue.

Those who supported the Moss amendment should not be permitted to express it in the terms of saying, "If you vote for the Moss amendment, you are against the nondegradation policy."

They are voting in favor of the existing nondegradation policy and against the nondegradation policy expressed in this bill.

There can be no other rationale. There can be no other logic.

So those voting for the Moss amendment are voting for the existing nondegradation policy.

I think, as the Senator from New Mexico and other members of the committee, that this committee, after 14 months of very hard work, has come up with a better policy for nondegradation, that is better to administer, is more flexible, gives the States greater rights in determining their own plans, better opportunities to determine their own direction, with greater opportunities for industry to arrange with the State for the necessary permission to proceed under the plan set forth in the Senate bill.

By all standards and by all regards, I think the Senate bill is an improvement over the situation under which we find ourselves now that would be perpetuated by the Moss amendment.

I think those who voted against the Scott amendment ought to also, in good conscience, vote against the Moss amendment.

If there is any logic at all in voting against the Scott amendment and for the Moss amendment, it must be on the basis that they prefer the regulatory scheme under the existing court decisions and under EPA regulations than they do under this bill.

I voted for the Scott amendment for one reason and one reason alone. That is, that there is enough confusion in this body to persuade me that 100 Members in the U.S. Senate do not understand the issues involved.

Under those circumstances, it seemed to me better to proceed slowly rather than quickly, and if we are going to have a policy, it not be the uninformed policy.

Mr. Moss. The last three Senators who addressed this body had certain things to say. Let me, first of all, concur with them.

But the Senator from New York (Mr. Buckley) said that certainty is needed, the certainty given by section 6.

If certainty is needed, why then did industry and labor come forward opposing section 6, if it gives all that certainty?

There is a pack of letters coming in from nearly every large corporation in this country, about 50 of them, saying that they want the study of the Moss amendment and they want to have that before they get section 6.

Besides the construction building trades of the AFL-CIO, a vast part of our organized labor came in and said the same thing. They support the Moss amendment.

So obviously there is not certainty in section 6 that they can see. They are fearful of it and they want to have the study first.

The Senator from New Mexico (Mr. Domenici) said that the many individual views that were in the report show the committee's work. I agree with that. Each one went about writing individual views because there were so many variations over views in the committee about the bill and about the subject matter.

It seems to me that this argues very strongly for more specific information about what section 6 is going to do, what its impact will be on the air, land, economy, jobs, and the capital risk before it is written into law.

If there is that much difference among the committee, think of what labor and industry think now, and think what the rest of us think about it.

We would like to know what is down at the bottom before we jump off the cliff. There may be some big rocks down there.

The Senator from Idaho (Mr. McClure) said that the committee version is better than the EPA regulations.

That may be so, but industry does not think so, and they are the ones that are putting up now with the regs and, obviously, they are having some trouble with them because we have lawsuits and all that sort of thing.

But at least they prefer to go on with something that is somewhat known to them than take the section now until there has been a study.

I come back to that again and again, because what we have to do is know as best we can what is going to happen if we write nondegradation into law.

As Senator McClure said, there is enough confusion in the Senate that we do not know, really, what we are doing and what we are getting at.

If I ever heard an argument for the Moss amendment, that is it.

Yes, there is confusion. Yes, there is concern. Yes, there are constituents coming at us from all sides—industry, labor, environmental groups, and others—and they obviously are confused about this.

Why can we not hold where we are, with the regulations and statutes that are in place now, until we get a study? A year's time is not going to cause any great degradation or shift in our pattern of air in this country.

I say that the Moss amendment makes eminent sense. It would give stability to some of the things that we will finally write into law.

If industry is so fearful now that they are unwilling to accumulate capital and risk it on producing energy or building plants, or elsewhere, they can have some degree of knowledge and security if we suspend section 6, drop section 6, and mandate the study and mandate it to be within 1 year's time.

Mr. RANDOLPH. I regret that I must oppose the amendment of the Senator from Utah (Mr. Moss) to strike section 6 from this legislation. If adopted this amendment would leave the Senate in the position of not formally responding to the most controversial issue before the committee during the development of the Clean Air Amendment of 1976.

Furthermore, the absence of any language in this measure on the question of nondeterioration of air quality would imply that this body is unwilling to assert that those areas of our country where the air is relatively clean should be protected from pollution.

I regret that an amendment I proposed became involved in the dispute of the issues raised by the proposals of the Senator from Utah (Mr. Moss). We reached agreement, however, on the schedule for voting on various nondeterioration amendments. I believe that the Senate can now dispose of this question in an orderly fashion that will permit us to consider other sections of this important legislation.

The legislative proposals to protect clean air areas are indeed the most controversial in this bill. Members of the Committee on Public Works believe that we have adopted a balanced and workable approach to this problem. It is unfortunate that there have been numerous mis-

understandings about both the intentions of the legislation and its potential impact.

The able Senator from Maine (Mr. Muskie), has spoken on this subject on several occasions. He has placed in the Congressional Record a lengthy statement responding to questions about the committee's action and which clearly explained the intent of the committee and the effects of the nondeterioration provisions of the bill. That statement, together with the text of a speech by Senator Baker on the same subject, was sent to each Member of the Senate. Last week during debate on this question, the Senator from New York (Mr. Buckley) discussed in detail the nondeterioration provisions of the bill. I hope that my colleagues have had an opportunity to review these materials so that we can debate this important issue free of the many misconceptions that have existed.

The issue of nondeterioration was raised initially in court decisions and administrative actions. Many organizations and individuals came to the Congress asking that we review this important policy decision and provide congressional direction to its implementation. The Committee on Public Works, after extensive consideration, has developed what we believe to be a rational and responsive approach to preventing the deterioration of our highest quality air resources.

The reaction to this legislation has been frankly surprising. Those who urged the Congress to become involved originally are now opposing the legislation. They do so for reasons that are often vague and are based on misleading interpretations of fact. Dire consequences are forecast if the nondeterioration provisions of this bill are adopted.

As I said at the outset of the debate, the significant deterioration program will be almost totally administered by the States.

I want to reiterate and strengthen the belief that I think the Members, not only of the committee but of the Senate, have, that this provision in the Clean Air Amendment of 1976 will not bring a halt to industrial and commercial activity in the United States. It will not prohibit the development of needed energy resources. It will not impose land use planning on communities. It will not result in high costs to individual citizens.

The members of the Committee on Public Works would never approve a measure—certainly, I would not approve it—that would impose intolerable conditions on the country in the name of either environmental protection or any other worthy cause.

The basic issue with which the amendment of Senator Moss is concerned is whether there will be a congressionally determined policy to protect clean air areas. The provisions of the committee bill state that there will be such a policy and establish the parameters for its implementation. There should be no question that we must protect those areas where air pollution is nonexistent or at a relatively low level. Such protection is far easier and less costly in the long run than trying to take corrective action after the air has been subjected to harmful emissions.

I repeat, there is a wide latitude in the bill presented to the Senate from the committee. There is adequate protection for the States. The basic authority to carry out the program is there because they know the problems and can better address local conditions.

I say with all respect to my colleagues from Utah that if his amendment is adopted in the Senate, I think we have begun to take a step

backward in relationship to the quality of air which Americans desire very much to be as high as possible.

More than a year's work by the committee would be revoked but, more important, the nondeterioration regulations proposed by the Environmental Protection Agency will remain in force. These are the regulations to which strong objections were raised and they would, in fact, bring about many of the undesirable results that are wrongly attributed to the committee bill.

This is an important issue and it is one that must be directly addressed by the Congress. I repeat that the nondeterioration section of the bill is a reasonable and workable answer to a far-reaching and complex question. I urge that the amendment be defeated.

#### ADDITIONAL STATEMENTS SUBMITTED

Mr. BROOKE. I hope that when future students of our history read that the debate over amending the Clean Air Act of 1970 began in Washington during a summer in which the air quality index was "hazardous" more often than not, they will find it mystifying, sad, and unfamiliar. If we can accelerate the impressive progress the Nation has made toward cleaning our atmosphere, perhaps they will. But, if we allow the remaining areas where the air is relatively pristine to deteriorate to the mediocre quality of present secondary standards, those generations may well look back on the decisions we make today with anger and regret.

I have deliberated long and hard over the method of preventing significant deterioration proposed by the committee. While I am convinced the goal is a proper one, I have definitely been concerned about the questions that have been raised about the economic and social implications of this kind of regulatory mechanism. In the end, I am voting against the 1-year delay because I do not think it will help us solve the fundamental problems this approach does present. On the other hand, I think these problems are less serious than the continuing deterioration of now-cleaner air. I believe they are capable of review and solution by the National Air Quality Commission which will learn from their implementation and propose whatever changes will be necessary to the Congress.

As I debated with myself over this issue, I viewed the arguments as falling into two categories. First, there were the economic arguments that growth in industry and employment would be cut back. I believe we already have enough data to rebut that. Of course, pollution control is never entirely cost free, but I think the costs of a non-degradation policy will be moderate and acceptable in light of the importance of the goal.

More important to me was the governmental or social argument that we are setting up a regulatory system that is overburdensome and which, even worse, may have unintended side effects like distortion of optimal urban growth patterns or misdirection of State planning resources. I admit that these questions have particular merit in this instance and that I do not think the bill answers them all. On the other hand, I see nothing in the Moss amendment which will provide answers to these questions in a year. Furthermore, I have considered alternative methods in my own mind, such as changing the secondary standards and relying on new, tougher minimums. But these too, have their

flaws and all would take a long time to enact and implement while clean air areas deteriorate. On the other hand, the Congress will certainly be receptive to recommendations by the new National Commission on Air Quality once it has reviewed these new provisions in action. Finally, if we delay, we are stuck with the EPA regulations recently promulgated. And I am convinced that Federal regulation is a good deal worse in most instances than State regulation.

Since feelings on this matter are so strong on both sides, I would like to review both kinds of arguments. For example the economic arguments raised in opposition have been several; such as:

First. The class II "intrusion factors" and class I locations will make it impossible to build the very large coal-fired powerplants that will be needed in the next 10 to 15 years.

Response: This is not true. Recently, FEA and EPA randomly selected and analyzed 74 projected coal-fired powerplants, including some as large as 3,000 megawatts. The FEA-EPA report concluded that none of the planned capacity of the 74 powerplants would be affected by the mandatory or mandatory and discretionary class I areas. The same analysis concluded that all of the planned new powerplants could be built and still meet the House class II or class III increments. This is particularly noteworthy because these 74 plants were planned without any consideration of conforming with the prevention of significant deterioration policy.

Second. Even if a single new large coal-fired powerplant could be built in an area, the policy would prohibit large coal-fired powerplants from being constructed in areas in which existing plants are located.

Response: This is not true either. The amount of new pollution increases allowable in any class II area is the same—with a single exception—regardless of whether that area has existing powerplants on date of enactment. This is because the allowable pollution increment is the amount of pollution increase allowed in addition to existing—"baseline"—levels. In fact, greater growth may be achieved in areas with high industrial concentrations, since any pollution reduction from existing sources would leave additional room inside the baseline for new sources to come in without using any of the increment.

Third. Even if new isolated powerplants could be built and expansions or additions to existing plants could be built, large new energy parks could not be built under the PSD provision.

Response: This also is not true. Assuming the new powerplants use best control technology which has been adequately demonstrated, taking into account, cost, and assuming fairly flat terrain, up to 8,000 megawatts of new power generating capacity could be built without exceeding class II increments. By contrast, Potomac Electric Power's entire Washington, D.C. service area's historic peak power use was only 3,623 megawatts.

Fourth. If other industry wanted to locate in the area of the energy park, this could not be allowed even in a class III area.

Response: This is not true, under the House bill, which is, I think, the better in this case, with fairly flat terrain, a class III area could add up to 16,000 megawatts of new capacity or could permit "collocation" of industrial sources and powerplants. This information is also contained in the EPA's study. The largest coal-fired powerplant in the United States is approximately one-fifth the above capacity.

Fifth. The FEA-EPA analysis which concludes that very large coal-fired powerplants could be built in hilly terrain is based in part on assumptions that tall stacks can be used. But the House bill prohibits tall stacks or stack increases.

Response: This is not true. The House bill allows credit for stack heights up to  $2\frac{1}{2}$  times the basic height of the structure. This means that the average new coal-fired powerplant could have stacks as tall as 500 feet.

Sixth. These studies all assume that new growth will be the only occasion for using up the increments. Not all this room for growth will be allowed, because as existing sources return to full capacity operation after overcoming the recession, they will use up much of the available increment.

Response: This is untrue. Again, the House bill, unlike the Senate bill, defines the "baseline"—to which new pollution increases may be added—on the basis of total "design capacity" of existing sources, not actual emissions. I support the House version.

Seventh. But existing sources which are now burning oil or natural gas and which must convert to coal because of ESECA-FEA orders or natural gas curtailments will eat up some of the available increment.

Response: This is not necessarily true. It is within the discretion of the Governor of the State not to count these pollution increases from existing sources against the increment. This exclusion authority would last for a long enough time until the existing source could acquire necessary equipment or low sulfur fuels to abate the increase.

Eighth. Dust stirred up by construction equipment could cause the particulate increments to be exceeded. Therefore, this is a "no growth" bill.

Response: Again, the House bill expressly gives the Governor of the State authority to permanently exclude from consideration any pollution from construction or other temporary activities. This important provision should be included in the act.

Ninth. The available room for growth of new sources may not be so great because of natural background particulates.

Response: First, in those areas where natural particulate levels are so great as to cause the national ambient air quality standards to be exceeded in any area, then the significant deterioration provisions for particulates would not apply to that area. Second, natural background levels of pollution would be counted in the "baseline" under the House bill. Thus, allowable increments would be in addition to the baseline. Third, if the full increments could not be used because background particulates approach the level of the ambient standards, the Governor could exclude these background particulates from consideration. Again, I believe these are the provisions we should adopt.

Tenth. Even if large powerplants could be built in an area, they would have to be spaced 40 to 100 miles apart, because of the intrusion effects referred to under first, above.

Response: According to EPA studies of the House bill, a new 1,500-megawatt powerplant "A" using best technology could be located within 1 mile of another powerplant "B" without exceeding class II increments, even if powerplant "B" consumed 90 percent of the class II increment in its area. Under current regulations, in fact, the distance would be 28 miles.

Eleventh. Best technology and prevention of significant deterioration requirements will be extremely costly and the cost figures quoted by EPA are much too low.

Response: Analysis by a contractor for the Electric Utility Industry—National Economic Research Associates, NERA—and by EPA come to similar conclusions on the cost impact of these provision; that is, the provisions of S. 3219 will have only a small cost impact. For example, by 1990, EPA estimates the bill will require an increase in total utility industry capital investment of 2.3 to 2.7 percent. The industry-NERA estimate is 1.4 to 2.2 percent. EPA estimates that because of these provisions the average residential electric bill will increase by only 1.9 to 2.3 percent by 1990. The industry-NERA estimate is 2.5 to 3.8 percent by 1990.

Twelfth. The best technology requirement for new powerplants will slow western low sulfur coal development and adversely affect railroads which would carry the coal.

Response. In fact, under the bill demand for low sulfur coal will be greater than under present EPA regulations. This has been recognized by the Electric Utility Industry consultants in the NERA study which concluded that under the House bill, by 1990, demand for western low sulfur coal will be 30 to 35 percent higher than if the bill were not enacted. The NERA study also concluded that enactment of this legislation will boost total coal demand 0.7 to 1.1 percent above what it would be without the bill.

Thirteenth. The only values of this policy are to health and environment. There are no economic benefits.

Response. This is not true. First the policy will create an incentive for development of new improved pollution control technology, including inherently clean processes. Second, these new technologies will enable more sources to locate in an area without using up the remaining air resources thus making greater concentration of growth possible.

The social or political questions about the way we set up the regulatory system are important ones too. For example:

One. Some have said that this is a land use planning bill in disguise and that Federal land use controls based solely on the criterion of air quality will result.

This is not true. As a matter of fact, the bill assures the States will have sole jurisdiction over the air quality classifications of 100 percent of all non-Federal lands and 97 percent of all Federal lands. Since the committee bill allows the States to control air quality over all State and private lands, and even over nearly all Federal lands, it clearly is not "a Federal land use policy."

Moreover, the bill in question only regulates air quality and emissions, not land use. The States are free to use the land as they see fit for any purpose or, if they choose, to allow the land to be used on a first-come-first-serve basis, so long as the air quality and emissions requirements are met. This does not differ from existing laws.

In determining whether to allow major pollution increases or to restrict pollution growth, States are directed by the bill to prepare analyses not only of health and environmental impacts, but also of economic, energy, and social impacts. These analyses are to be available to the public, so that the hearings can be a forum for consideration of

economic, energy, and environmental factors. Presumably the States already have planning policies dealing with several variables.

Two. Some say while the States could have final redesignation authority, EPA will have the final say over which sources may get permits to construct.

The States are responsible for deciding whether to issue permits to new sources. EPA will only be issuing permits if a State refuses to do so. No State permit may be disapproved if the procedures are followed and if the ceilings and increments set in the bill are observed. EPA will not be authorized to add new requirements or limitations by regulation.

The purposes of setting specific requirements in the bill are: to set clear minimum national requirements which will not be subject to legal challenge; to give the States the authority to implement in these measures; and to limit EPA's authority to add new requirements and to second guess the States.

There are some who fear the delays will keep growth rates low in the next few years.

Three. The extent of the "intrusion effect" for any new plant cannot be calculated with certainty. It must be calculated by models, which predict widely varying results. And environmental groups with their models may challenge planned new construction which would be allowed under other models.

The distances of 50 miles or more, discussed by some assumes a very large, coal-fired powerplant meeting only minimum emission limitation requirements and under worst case weather and pollution conditions. But the bill requires new industrial sources of pollution to use best available control equipment, thereby reducing the potential distance a huge coal-fired plant would have to be built from a national park or other class I area to as little as 6 miles or less.

The models actually used by EPA do not predict any drastic intrusion effects. Furthermore, at the request of various industry and labor groups, the House bill was amended to require EPA to hold an open conference on air quality modeling and to set a standardized model—or models for varying conditions—after going through stringent rulemaking procedures. Thus, any uncertainty over which model should be applied will be ended. This provision is in the House bill, and should be added to the Senate bill.

Fourth. Some feel the 1-year monitoring requirement of new sources will result in a growth moratorium.

This is not true. First, the monitoring provision only applies to "major sources" as defined in the bill, that is, 100 tons/year. Second, the monitoring may be for less than a year if the basic necessary information can be provided in less time. Third, it may be waived altogether if the data is already available. Fourth, monitoring would normally occur in the site selection process and so should not cause any halt in construction.

As I, like many of my colleagues, considered the alternatives, the one most often was suggested that national secondary standards protect against adverse health and welfare effects.

I have concluded this is not true. The Health and Environment Subcommittee has published a 40-page paper describing the ways in

which even the national primary ambient air quality standards are inadequate to protect health—"Prevention of Significant Deterioration: An Once of Prevention," December 3, 1975. A summary of the limitations of the primary standards is as follows:

First. The margins of safety set to prevent the occurrence of known and anticipated health effects have turned out to be very modest or nonexistent.

Second. The national primary standards are based on the assumption that a no-effects threshold can be proved; in fact, this assumption of a safe threshold appears to be false for many, if not all, of the pollutants.

Third. The national primary standards are not designed to protect against genetic mutations, birth defects, or cancer which may be associated with air pollution, although these risks may be reduced by reducing pollution to levels of the ambient standards.

Fourth. The national primary ambient standards are not designed to provide adequate protection against diseases which result from long-term chronic exposures or periodic short-term peak concentrations of pollutants.

Fifth. The national primary standards fail to protect against hazards to health resulting from cumulative or synergistic effects of multiple pollutants in the air.

Sixth. The national primary air quality standards do not protect against adverse effects which appear to be related to derivative pollutants which result in the atmosphere—such as sulfates and nitrates.

Despite the availability of this document for 4 months, no one has taken issue with its basic conclusions. Moreover, similar studies have shown adverse effects to crops and the environment at levels below the secondary standards.

And the **national ambient standards** do not protect visibility in areas such as the Grand Canyon or other national parks on national wilderness areas. At sulfur dioxide levels equivalent to the national secondary standard, visibility can be as little as 3 to 4 miles. If particulate pollution levels are simultaneously high, visibility may be reduced still further, without exceeding the secondary standards.

Of course, one answer has been that, if the **national ambient air quality standards** do not protect health and environment from all adverse effects, then the standards should be revised to provide such protection.

No safe threshold can be established for these pollutants, according to the National Academy of Sciences. Thus, in order to protect against all harmful effects it would be necessary to set a zero or background standard.

Obviously, this no-risk philosophy which ignores all economic and social consequences is impractical. This is particularly true in light of the legal requirement for mandatory attainment of the national primary standards within 3 years.

Others have suggested that unless conclusive proof of actual harm can be found based on the past occurrence of adverse effects, then the standards should remain unchanged and no pollution limits should be applicable to areas which are cleaner than the ambient standards. The second approach ignores the commonsense reality that "an ounce of prevention is worth a pound of cure."

What the committee bill does is to strike a proper balance between these two approaches. Since there is a reasonable basis for anticipation of tightening of the ambient standards, a policy of maximum practicable protection of health and welfare has been developed.

I think the best we can do is keep our clean air clean while we learn more.

Finally, what about Massachusetts? Our area is least affected by these provisions as it would nearly all be class II under the Senate bill, or class III if the House system is enacted. Only two or three areas in New England might be designated class I. Studies made by the State's department of environmental affairs confirm the findings of the EPA and the National Economic Research Associates. To put it simply, at worst it may not be possible to locate a coal-fired electric generating facility in southeastern Massachusetts until the technology of stack scrubbers improves significantly. But no such plant is currently planned. And I believe the time delays that might be involved if this were someday to become a possibility, can be justified by the need to keep our air from further deteriorating.

Thus, the important findings are that the bill allows for many growth options using best technology to control emissions. Indeed, we in the East may benefit by the fact that this may provide incentives to locate new growth in already industrialized regions rather than on new lands on the fringe of the development.

All in all, I am persuaded that the committee policy with certain amendments which are contained in the House version, represents the best possible way to go to preserve our atmosphere while we develop more sophisticated tools.

I ask that part of the text of the summary of EPA's study of the economic impact of the Senate significant deterioration provision be printed in the Record.

#### SUMMARY OF EPA ANALYSIS OF THE IMPACT OF THE SENATE SIGNIFICANT DETERIORATION PROPOSAL<sup>1</sup>

##### INTRODUCTION AND CONCLUSIONS

###### *A. Introduction*

A major purpose of the Clean Air Act of 1970 is "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." The Act is administered by the U. S. Environmental Protection Agency (EPA) and has been interpreted by the courts as barring the degradation of air in areas that are cleaner than the National Ambient Air Quality Standards.

The purpose of this paper is to summarize over 8 months of analyses that EPA and its consultants have conducted on the specific impacts of the Senate Bill on selected major industries, including electric utilities, kraft pulp and paper, refineries, synthetic fuel plants, and copper smelters.

###### *B. Conclusions*

The principal conclusions of EPA's analyses are:

The Senate significant deterioration proposal will not prevent the construction of major, economically sized industrial facilities. Rather, some sources may have to employ different air pollution control strategies such as further control of sulfur dioxide emissions, relocation at an alternative site, construction of taller stacks or smaller plants, etc.

<sup>1</sup> S. 3219—Clean Air Act Amendments of 1976—(Section 110 g). [See Secs. 160-169]

The Senate significant deterioration proposal allows for the collocation of major industrial sources. Specifically, the minimum required separation distance for economically sized facilities meeting Federal New Source Performance Standards (NSPS) or an equivalently defined control level is 0 to 40 miles for power plants, 0 to 12 miles for kraft pulp and paper mills, 0 to 3 miles for oil shale plants, 0 to 30 miles for gasification plants, 0 to 18 miles for refineries, and 5 to 16 miles for copper smelters. If control beyond NSPS is assumed, the separation distances are reduced to 0 to 31 miles for power plants, 0 to 8 miles for paper mills, 0 to 6 miles for gasification plants, and 0 to 10 miles for refineries.<sup>2</sup>

The Senate proposal gives the States maximum flexibility in determining how close major sources should be located to Federal land such as National Parks and Wilderness areas. If the location of the source would have an adverse impact on the air quality values of the Federal land areas, major industrial sources would have to comply with the Class I increments and locate the following distances away from Federal lands that have been classified as Class I: 5 to 60 miles for powerplants, 3 to 28 miles for kraft pulp and paper mills, 3 to 8 miles for oil shale plants, 7 to 40 miles for gasification plants, 12 to 43 miles for refineries, and 13 to 31 miles for copper smelters.<sup>3</sup> However, if the location of the source would not adversely affect the air quality values of the federal land area, the source would not have to comply with the Class I increments and could locate closer than indicated by the previous estimates.

It is expected that the major economic impact of the Senate proposal will be on the electric utility industry. Specifically, the Senate proposal will increase the utility industry's capital requirements over the next fifteen years by a maximum of \$11.5 billion which represents about a 3% increase in the industry's projected capital expenditure in the absence of significant deterioration. The Senate proposal will also increase average residential customers yearly expenditures in 1990 by a maximum of \$28 per year. This is equivalent to an increase of slightly more than 2%.

The Senate proposal will probably require some other industrial facilities to employ different air pollution control strategies such as further control of sulfur dioxide emissions, relocation at an alternative site, construction of a taller stack or a smaller plant, etc. However, most of these sources would be able to comply with the Senate proposal by meeting Federal New Source Performance Standards and locating in areas of flat or moderate terrain.

In the post-1980 period, a Class III designation or a variance from the Class II increment is probably required in some urbanizing areas in order to prevent significant restrictions and/or altered development patterns by 1990. A similar designation would probably be required for large scale energy and industrial development at one location (i.e., energy or industrial parks) and for copper smelters and gasification plants located in very hilly terrain.

#### ESTIMATED SIZE OF MAJOR INDUSTRIAL FACILITIES THAT CAN BE CONSTRUCTED UNDER THE SENATE PROPOSAL

EPA and its consultants have conducted extensive modeling analyses in order to estimate the size and type of facilities that could be constructed at one site under the Senate proposal. The results of these analyses, which are summarized in Table 2 and briefly discussed below, indicate that the size of facility which can be constructed is very dependent on assumptions concerning surrounding terrain stack height, pollution control technology and worst case meteorological conditions. The results presented in Table 2 represent EPA's best estimate of the maximum size facilities which could be built at one site under the Senate proposal. However, in order to obtain site specific estimates for actual facilities, a case-by-case analysis would be required. Such a review may give results slightly higher or lower than indicated in Table 2.

##### 1. Coal-Fired Power Plants—

Between an 1100 to greater than 4000 mw coal-fired power plant meeting New Source Performance Standards (NSPS) could be built in areas of flat or moderate terrain (i.e., where the surrounding terrain is below the top of the stack). If the source controlled beyond NSPS, a 1250 to greater than 5000 mw plant could be built in flat or moderate terrain. EPA's analyses also show that terrain has an important impact on the size power plant that can be built. Specifically,

<sup>2</sup> The low estimate for each industry assumes flat or moderate terrain while the high estimate assumes hilly terrain.

<sup>3</sup> The low estimate for each industry assumes control beyond NSPS and flat or moderate terrain. The high estimate assumes control equal to NSPS and hilly terrain.

in areas of hilly terrain (i.e., where the surrounding terrain is considerably above the top of the stack—3.5 to 5% slope) only a 450 mw plant meeting NSPS could be built. However, if the plant controlled beyond NSPS, a 1100 mw plant could be built in the East and greater than a 4000 mw plant in the West.

#### 2. Petroleum Refineries—

EPA's analyses show that refineries in flat or moderate terrain will not be constrained by the Senate Class II increment. Assuming compliance with NSPS, one 300,000 bbl/d fuel oil refinery and two 300,000 bbl/d gasoline refineries could be built at one site. If control beyond NSPS is assumed (i.e., 0.3% oil), two 300,000 bbl/d fuel oil refineries and three 300,000 bbl/d gasoline refineries could be built at one site.<sup>4</sup> In areas of hilly terrain, fuel oil refineries meeting NSPS may have to reduce capacity to 100,000 bbl/d (a typical refinery expansion). Gasoline refineries may have to reduce capacity to 200,000 bbl/d (slightly smaller than a typical new refinery). However, if control beyond NSPS is assumed, even in areas of hilly terrain, typical size new gasoline and fuel oil refineries could be built.

#### 3. Synthetic Fuel Plants—

EPA's analyses show that in areas of flat or moderate terrain typical size oil shale (50,000 bbl/d) and gasification plants (250 mmcf/d) would not be constrained by the Senate Class II increment. In fact, it would be possible to put several oil shale and gasification plants at one site without violating the Senate Class II increments for sulfur dioxide.<sup>4</sup> However, in areas of hilly terrain only an oil shale plant of 68,000 bbl/d can be built. This is slightly larger than the proposed typical size plant. The comparable limitations for a gasification plant meeting NSPS (where applicable) in areas of hilly terrain is 100 mmcf/d. However, if control beyond NSPS is assumed, a 330 mmcf/d gasification plant could be built in hilly terrain. If the constraining terrain feature is closer than 6 miles, a Class III designation may be required to site a 250 mmcf/d gasification plant. However, use of taller stacks or the selection of a nearby site with less hilly terrain could be feasible alternatives.

#### 4. Kraft Pulp and Paper Mills—

EPA's analyses show that at least two 1000 ton per day kraft pulp and paper mills meeting NSPS with on-site coal-fired generation could be constructed in areas of flat or moderate terrain. Since most kraft mills burn fuels with much lower sulfur contents than coal, this analysis is extremely conservative. In areas of hilly terrain a kraft mill capacity of about a 600 tons per day mill could be built if the plant just met NSPS. However, if control beyond NSPS is assumed, the allowable size mill in areas of hilly terrain could increase to 1000 tons per day in the East and to over 3000 tons per day in the West. Unbleached mills have much lower emissions and would be significantly less restricted. In view of the fact that the typical size for new paper mills is about 1000 tons per day and 400 tons per day for expansions at existing sites, it can be concluded that the Senate proposal will not prevent the construction of economically efficient kraft pulp and paper mills.

#### 5. Copper Smelters—

EPA's analyses show that at least a 1500 ton per day copper smelter meeting NSPS could be constructed in areas of flat or moderate terrain. In areas of hilly terrain about a 1000 ton per day facility could be built. If the constraining terrain feature is closer than 4 miles, a Class III designation may be required. However, use of a taller stack or selection of a nearby site with less hilly terrain could also be feasible alternatives.

### ECONOMIC IMPACT OF SENATE PROPOSAL

The data presented in Tables 2, 3 and 4 show that the Senate significant deterioration proposal will not prevent the construction of major industrial facilities. However, the Senate proposal may require some facilities to employ different air pollution control measures such as further control of sulfur dioxide emissions, construction of taller stacks or smaller plants, relocation at alternative sites with more favorable terrain conditions, etc. While the use of such control strategies will impose additional costs on consumers, these additional expenditures must be balanced against the benefit that would result from preventing the degradation of air quality up to the National Ambient Air Quality Standards.

<sup>4</sup> It should be noted that the National Ambient Air Quality Standards for oxidants may prevent the construction of more than one refinery, oil shale, or gasification plant at one site.

It is expected that the major economic impact of the Senate proposal will be on the electric utility industry. The results of EPA's study<sup>5</sup> are summarized in Table 5.

TABLE 5.—ECONOMIC IMPACT ON THE ELECTRIC UTILITY INDUSTRY OF SENATE SIGNIFICANT DETERIORATION PROPOSAL

	Capital expenditures 1975-90 (billions)	Household expenditures <sup>1</sup> on electricity in 1990 (per year)
Baseline in the absence of significant deterioration.....	\$435	\$1, 200
Impact of Senate proposal.....	* \$2. 4-\$11. 5	\$3-\$28
Percent increase due to Senate proposal.....	* 0. 5-2. 6	0. 3-2. 3

<sup>1</sup> Household expenditures on electricity include the direct expenditures for monthly electricity bills and indirect expenditures to producers of other goods and services in order to pay the cost of the electricity used to produce these goods and services.

<sup>2</sup> The low end of the range assumes that BACT is defined by the States to be NSPS or SIP's where more stringent. The high end of the range assumes that BACT is defined to be low sulfur coal plus scrubbers in the West and medium sulfur coal plus scrubbers in the rest of the country.

As indicated in the above table, the Senate proposal would increase the industry's capital requirements over the next ten years by a maximum of \$11.5 billion. This represents a maximum increase of 2.6% in the industry's projected capital expenditures of \$435 billion in the absence of significant deterioration. In order to finance the required expenditures, average expenditures per household in 1990 would increase by a maximum of \$28 per year. This is equivalent to an increase of about 2.3%.

With regard to other major industrial facilities, Tables 2, 3, and 4 support the conclusion that most facilities will not have to employ different air pollution control strategies. Rather, most of these facilities would be able to comply with the Senate significant deterioration requirements simply by complying with the current requirements of the Clean Air Act (i.e., New Source Performance Standards). However, a few of these facilities may have to relocate to areas of flat or moderate terrain, control beyond NSPS, build a taller stack or smaller plants, etc.

TABLE 1.—SERVICES COVERED BY EPA'S AND U.S. SENATE'S SIGNIFICANT DETERIORATION REGULATIONS

Type of source, EPA regulations, and Senate bill:<sup>1</sup>

1. (a) Fossil-fuel steam electric plants of more than 1,000 million BTU per hour input, covered, covered.
- (b) Fossil-fuel steam electric plants of more than 250 million BTU per hour input but less than 1,000 million BTU per hour input, not covered, covered.
2. Coal cleaning plants (i.e., thermal dryers), covered, covered.
3. Kraft pulp mills (i.e., recovery furnaces), covered, covered.
4. Portland cement plants, covered, covered.
5. Primary zinc smelters, covered, covered.
6. Iron and steel mills (i.e., metallurgical furnaces), covered, covered.
7. Primary aluminum ore reduction plants, covered, covered.
8. Primary copper smelters, covered, covered.
9. Municipal incinerators capable of burning more than 250 tons of refuse per day, covered, covered.
10. Sulfuric acid plants, covered, covered.
11. Petroleum refineries, covered, covered.
12. Lime plants, covered, covered.
13. Phosphate rock processing plants, covered, covered.
14. By-product coke oven batteries, covered, covered.
15. Sulfur recovery plants, covered, covered.

<sup>5</sup> EPA, *A Preliminary Analysis of the Economic Impact on the Electric Utility Industry of Alternative Approaches to Significant Deterioration*, February 5, 1976.

<sup>1</sup> The 29 source categories specified under the Senate Bill must meet the criteria of having the potential to emit more than 100 tons per year. If one of the specified sources does not meet the criteria, it is not regulated under Section 110 g.

16. Carbon black plants (i.e., furnace process), covered, covered.
17. Primary lead smelters, covered, covered.
18. Fuel conversion plants, covered, covered.
19. (a) Ferroalloy production facilities, covered, not covered.  
(b) Secondary metal production facilities, not covered, covered.
20. Hydrofuric acid plants, not covered, covered.
21. Nitric acid plants, not covered, covered.
22. Sintering plants, not covered, covered.
23. Chemical process plants, not covered, covered.
24. Petroleum storage and transportation for facilities with a capacity exceeding 300,000 barrels, not covered, covered.
25. Taconite ore processing facilities, not covered, covered.
26. Glass fiber processing facilities, not covered, covered.
27. Charcoal production facilities, not covered, covered.
28. Fossil-fuel boilers of more than 250 million BTU per hour input, not covered,<sup>2</sup> covered.

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<sup>2</sup> Although not covered as a separate source category under EPA regulations, many such facilities would be included as part of the other source categories specified.

TABLE 2.—ESTIMATED SIZE OF MAJOR INDUSTRIAL FACILITIES THAT CAN BE BUILT AT 1 SITE UNDER THE SENATE CLASS II INCREMENT

Type of facility	BACT = NSPS <sup>1</sup>		BACT = control beyond NSPS <sup>2</sup>	
	Flat or moderate terrain <sup>3</sup>	Hilly terrain <sup>4</sup>	Flat or moderate terrain <sup>3</sup>	Hilly terrain <sup>4</sup>
Coal-fired powerplants <sup>5</sup>	1,100-4,000+ MW	450 MW	1,250-5,000+ MW	1,100-4,000+ MW
Kraft Pulp & Paper Mills (with onsite generation) <sup>5</sup>	2,000+ TPD	600 TPD	3,600-5,000+ TPD	1,000-3,500 TPD
Gasoline refinery	Two 300,000 BPD plants	200,000 BPD	Two 300,000 BPD plants	300,000 BPD
Fuel oil refinery	300,000 BPD	100,000 BPD	Three 300,000 BPD plants	245,000 BPD
Oil shale plant	Six 50,000 BPD plants	68,000 BPD	Not applicable	Not applicable
Gasification plant	Four 250 MMSCF/D plants	100 MMSCF/D	Eight 250 MMSCF/D plants	330 MMSCF/D
Copper smelter	1,500+ TPD	1,000 TPD	Not applicable	Not applicable

<sup>1</sup> Best available control technology (BACT)—NSPS assumed the following emission rates. (Note: The letter (A) indicates that no NSPS exists and that a practicable fuel-sulfur content was assumed.)

Coal-fired powerplant.—1.2 lbs/million Btu.

Kraft Pulp & Paper Mills (with onsite coal-fired power generation).—1.2 lbs/million Btu.

Gasoline refinery (A).—0.75 percent sulfur content (by weight).

Fuel oil refinery (A).—0.75 percent sulfur content (by weight).

Oil shale plant (A).—Emissions from colony EIS include controls on major emission sources.

Gasification plant (A).—1.2 lbs/million Btu on the steamplant. Emissions from gasification process are derived from individual EIS's.

Copper smelter.—Stack emissions of 6.4 lbs/ton of concentrate plus 1 percent of input sulfur (captured fugitive emissions). Uncaptured fugitive emissions equal to 0.5 percent of input sulfur.

<sup>2</sup> BACT.—Control beyond NSPS was assumed to be equivalent to the following emission rates. (Note: The range indicates the use of different grade coals—FGD on medium-sulfur coal in the East and FGD on low-sulfur coal in the West.)

Coal-fired powerplant.—0.12-0.46 lbs/million Btu.

Kraft Pulp & Paper Mills (with onsite coal-fired power generation).—0.12-0.46 lbs/million Btu.

Gasoline refinery.—0.3 percent sulfur content.

Fuel oil refinery.—0.3 percent sulfur content.

Oil shale plant.—Not applicable.

Gasification plant.—0.2 lbs/million Btu on steamplant only; 99 percent control of TSP.

Copper smelter.—Not applicable.

<sup>3</sup> Flat or moderate terrain assumes that the surrounding terrain is below the top of the stack. When a range is given, the more restrictive figure corresponds to terrain at or near the stack top and the less restrictive figure corresponds to terrain at or near the plant elevation (generally equivalent to a 0 to 1 percent slope).

<sup>4</sup> Hilly terrain assumes the direct impact of the plume on terrain significantly higher than the top of the stack. For table 2, this was equivalent to a terrain slope of 3.5 to 5 percent. For table 3, the distance to the constraining terrain feature for 2 facilities varies from industry to industry due to different stack heights and emission rates. EPA's analysis indicates that the constraining terrain feature when collocating 2 typical facilities is within the range of 3 to 20 miles. Table 4, indicates the distance from the typical facility to the point of impact in an assumed class 1 area.

<sup>5</sup> The range of numbers indicated under BACT=control beyond NSPS correspond to the use of coals with different sulfur content. The more restrictive member corresponds to the use of medium or washed sulfur coal from the Mid-west with flue gas desulfurization (FGD) plus the most constraining terrain condition (see footnotes 3 and 4), the less restrictive figure corresponds to eastern or western low sulfur coal with FGD plus the less constraining terrain condition.

TABLE 3.—REQUIRED SEPARATION DISTANCES FOR MAJOR INDUSTRIAL FACILITIES UNDER THE SENATE CLASS II INCREMENTS

Type of facility	BACT = NSPS 1		BACT = control beyond NSPS 2	
	Flat or moderate terrain 3	Hilly terrain 4	Flat or moderate terrain 3	Hilly terrain 4
Coal-fired powerplant (1,000 MW) 6	0-28 miles	40 miles	0 mile	12-31 miles
Kraft Pulp & Paper Mills (with coal-fired onsite generation) (1,000 TPD) 6	0 mile	12 miles	do	3-8 miles
Gasoline refinery (300,000 BPD)	do	3 miles	do	2 miles
Fuel oil refinery (300,000 BPD)	2 miles	18 miles	do	10 miles
Oil shale plant (50,000 BPD)	0 mile	3 miles	Not applicable	Not applicable
Gasification plant (250 MMSCF/D)	do	30 miles	0 mile	6 miles
Copper smelter (1,500 TPD)	5-13 miles	16 miles	Not applicable	Not applicable

1 Best available control technology (BACT)—NSPS assumed the following emission rates. (Note: The letter (A) indicates that no NSPS exists and that a practicable fuel-sulfur content was assumed.)  
 Coal-fired powerplant—1.2 lbs/million Btu.

Kraft Pulp & Paper Mills (with onsite coal-fired power generation).—1.2 lbs/million Btu.

Gasoline refinery (A).—0.25 percent sulfur content (by weight).

Fuel oil refinery (A).—0.75 percent sulfur content (by weight).

Oil shale plant (A).—Emissions from Colony EIS include controls on major emission sources.

Gasification plant (A).—1.2 lbs/million Btu on the steamplant. Emissions from gasification process are derived from individual EIS's.

Copper smelter.—Stack emissions of 6.4 lbs/ton of concentrate plus 1 percent of input sulfur (captured fugitive emissions). Uncaptured fugitive emissions equal to 0.5 percent of input sulfur.

2 BACT.—Control beyond NSPS was assumed to be equivalent to the following emission rates.

Oil shale plant.—Not applicable.

Gasification plant.—0.2 lbs/million Btu on steamplant only; 99 percent control of TSP.

Copper smelter.—Not applicable.

3 Flat or moderate terrain assumes that the surrounding terrain is below the top of the stack. When a range is given, the more restrictive figure corresponds to terrain at or near the stack top and the less restrictive figure corresponds to terrain at or near the plant elevation (generally equivalent to a 0 to 1 percent slope).

4 Hilly terrain assumes the direct impact of the plume on terrain significantly higher than the top of the stack. For table 2, this was equivalent to a terrain slope of 3.5 to 5 percent. For table 3, the distance to the constraining terrain feature for 2 facilities varies from industry to industry due to different stack heights and emission rates. EPA's analysis indicates that the constraining terrain feature when collocating 2 typical facilities is within the range of 3 to 20 miles. Table 4, indicates the distance from the typical facility to the point of impact in an assumed class 1 area.

6 The range of numbers indicated under BACT = control beyond NSPS correspond to the use of coals with different sulfur content. The more restrictive member corresponds to the use of medium or washed sulfur coal from the Midwest with flue gas desulfurization (FGD) plus the most constraining terrain condition (see footnotes 3 and 4), the less restrictive figure corresponds to eastern or western low sulfur coal with FGD plus the less constraining terrain condition.

(Note: The range indicates the use of different grade coals—FGD on medium-sulfur coal in the East and FGD on low-sulfur coal in the West.)

Coal-fired powerplant.—0.12-0.46 lbs/million Btu.

Kraft Pulp & Paper Mills (with onsite coal-fired power generation).—0.12-0.46 lbs/million Btu.

Gasoline refinery.—0.3 percent sulfur content.

Fuel oil refinery.—0.3 percent sulfur content.

TABLE 4.—REQUIRED DISTANCE FROM MAJOR INDUSTRIAL FACILITIES FROM CLASS 1 AREAS

Type of facility	BACT=NSPS 1		BACT=control beyond NSPS 2	
	Flat or moderate terrain 3	Hilly terrain 4	Flat or moderate terrain 3	Hilly terrain 4
Coal-fired powerplants (1,000 MW) 5	60 miles.	60 miles.	5-20 miles.	25-42 miles.
Kraft Pulp & Paper Mills (with onsite generation) (1,000 TDP) 6	10-20 miles.	28 miles.	3-14 miles.	7-16 miles.
Gasoline refinery (300,000 BPD)	20 miles.	37 miles.	14 miles.	26 miles.
Fuel oil refinery (300,000 BPD)	23 miles.	43 miles.	12 miles.	22 miles.
Oil shale plant (50,000 BPD)	3 miles.	8 miles.	Not applicable.	Not applicable.
Gasification plant (250 MMSCF/D)	19 miles.	40 miles.	7 miles.	33 miles.
Copper smelter (1,500 TPD)	13-28 miles.	31 miles.	Not applicable.	Not applicable.

<sup>1</sup> Best available control technology (BACT)—NSPS assumed the following emission rates. (Note: The letter (A) indicates that no NSPS exists and that a practicable fuel-sulfur content was assumed.)

Coal-fired powerplant.—1.2 lbs/million Btu.

Kraft Pulp & Paper Mills (with onsite coal-fired power generation).—1.2 lbs/million Btu.

Gasoline refinery (A).—0.75 percent sulfur content (by weight).

Fuel oil refinery (A).—0.75 percent sulfur content (by weight).

Oil shale plant (A).—Emissions from Colony EIS include controls on major emission sources.

Gasification plant (A).—1.2 lbs/million Btu on the steamplant. Emissions from gasification process are derived from individual EIS's.

Copper smelter.—Stack emissions of 6.4 lbs/ton of concentrate plus 1 percent of input sulfur (captured fugitive emissions). Uncaptured fugitive emissions equal to 0.5 percent of input sulfur.

<sup>2</sup> BACT—Control beyond NSPS was assumed to be equivalent to the following emission rates.

Coal-fired powerplant.—Not applicable.

Gasification plant.—0.2 lbs/million Btu on steamplant only; 99 percent control of TSP.

Oil shale plant.—Not applicable.

Copper smelter.—Not applicable.

<sup>3</sup> Flat or moderate terrain assumes that the surrounding terrain is below the top of the stack. When a range is given, the more restrictive figure corresponds to terrain at or near the stack top and the less restrictive figure corresponds to terrain at or near the plant elevation (generally equivalent to a 0 to 1 percent slope).

<sup>4</sup> Hilly terrain assumes the direct impact of the plume on terrain significantly higher than the top of the stack. For table 2, this was equivalent to a terrain slope of 3.5 to 5 percent. For table 3 the distance to the constraining terrain feature for 2 facilities varies from industry to industry due to different stack heights and emission rates. EPA's analysis indicates that the constraining terrain feature when collocating 2 typical facilities is within the range of 3 to 20 miles. Table 4, indicates the distance from the typical facility to the point of impact in an assumed class 1 area.

<sup>5</sup> The range of numbers indicated under BACT=control beyond NSPS corresponds to the use of coals with different sulfur content. The more restrictive member corresponds to the use of medium or washed sulfur coal from the Midwest with flue gas desulfurization (FGD) plus the most constraining terrain condition (see footnotes 3 and 4); the less restrictive figure corresponds to eastern or western low sulfur coal with FDG plus the less constraining terrain condition.

(Note: The range indicates the use of different grade coals—FGD on medium-sulfur coal in the East and FGD on low-sulfur coal in the West.)

Coal-fired powerplant.—0.12-0.46 lbs/million Btu.

Kraft Pulp & Paper Mills (with onsite coal-fired power generation).—0.12-0.46 lbs/million Btu.

Gasoline refinery.—0.3 percent sulfur content.

Fuel oil refinery.—0.3 percent sulfur content.

## APPENDIX—DESCRIPTION OF TYPICAL FACILITIES

Description, typical size, and stack height:

Coal-fired power plants, 1,000MW, 500 feet-1,000 feet.

Kraft pulp and paper mills with on-site coal-fired generation, 1,000 TPD, 100 feet-300 feet.

New gasoline and fuel oil refineries, 300,000 BPD, multiple source highest stack 200 feet.

Refinery expansions 100,000 BPD, multiple source highest stack 200 feet.

Oil shale, 50,000 BPD, multiple source highest stack 312 feet.

Gasification, 250 MMSCF/D, multiple source highest stack 300 feet.

Copper smelters, 1,500 TPD, 500 feet-1,000 feet.

Mr. BUCKLEY. As my colleagues know by now, the Circuit Court of Appeals for the District of Columbia yesterday affirmed the existing Environmental Protection Agency regulations to prevent significant deterioration of air quality.

I would like to make two points, as they relate to the decision:

The court found the philosophy of preventing significant deterioration a reasonable and necessary one. And the court, by making this decision, underlined for the Senate the existence of the present regulations.

Thus, as the Senate confronts a decision on the Moss amendment, we have a choice: Do we want the country to be subject to bureaucratic regulations and EPA source review, or do we want to replace that with a carefully defined and reasonable statutory policy. The latter, I believe, is wise public policy.

Mr. EAGLETON. Ever since it was introduced 4 months ago, the Moss amendment to delete the non-deterioration provision of S. 3219 has been the subject of intensive debate and lobbying. Serious questions have been raised about the economic and energy impact of such a program and, frankly, I do not believe those questions have been fully answered.

Clearly, we cannot afford to pursue one objective, no matter how worthy, without concern for competing values. And, I think we have to recognize that, increasingly, our environmental programs collide with economic and energy goals. How serious that impact will be and what mitigating steps might have to be taken are matters that will require continuing attention.

I am not persuaded, however, that the existence of unanswered questions should be the basis for abandoning a key program in our effort to provide a healthy environment. It is not enough that we clean up the air after it has been polluted to dangerous levels. I think we must take reasonable preventative measures, as well.

I have no doubt that was the intent of Congress in 1967 and 1970 when it established the broad public policy of protecting and enhancing the quality of our air, and the courts have so ruled. Unfortunately, Congress did not provide specific guidelines for a nondegradation program, and the Environmental Protection Agency, acting under court order, has been left with enormous, unrestrained discretion to write its own program.

That situation led in 1973 to demands by industry and the administration for congressional action exemplified by the following statement by Carl Bagge, representing the National Coal Association at a July 1973 Senate hearing:

This is far too significant an issue to be determined by the judiciary. Its economic and social implications are so broad that it cannot and should not be deter-

mined by an independent regulatory agency in a rulemaking proceeding as has been proposed. This is an issue which can only be resolved . . . by the Congress of the United States.

The Senate Public Works Committee responded to these entreaties by adopting guidelines for a nondegradation program. Those guidelines shift primary responsibility for administering the standards to the States and they substantially reduce the number of areas which automatically would be designated class I.

The Moss amendment proposes to delete those guidelines from the bill and to withhold any congressional action until after completion of an economic and energy impact study. Significantly, however, Senator Moss does not propose to eliminate the court-ordered EPA program which would continue while the study proceeds and I understand he will oppose any effort to do that.

For all practical purposes, then, the choice is whether to allow EPA and the Federal courts to formulate a nondegradation program through regulations or to replace them with carefully considered congressional guidelines which reserve a preeminent role for the States. It was the view of all members of the Public Works Committee—majority and minority members alike—that Congress had to act.

While I am persuaded that there is a need for better understanding of the full implications of the nondegradation program and of the validity of the standards established by the act, I believe that some program is needed and that the Senate committee's approach is superior to that of EPA. For that reason, I support the committee position against the Moss amendment. I will also vote for the proposal for a careful study of these questions, and I am prepared to support any changes in the act which that study indicates are necessary.

Mr. FANNIN. During earlier debate, the distinguished Senator from Idaho and I engaged in discussion on the sovereignty of State permits. Because we did not reach agreement, I would like to ask my colleague further questions. If the permit applicant meets the class I increments, but a Federal land manager is not satisfied, who makes the final permit decision?

Mr. McCLURE. The State makes the final permit decision. Both the committee bill and the report attest to that. There is language in the report, however, which might be used to argue otherwise. I refer to the phrase, "and certify to that effect before the State may issue a permit." This language, however, must be viewed in context with the actual bill language, "to the satisfaction of the State." Furthermore, the floor manager, Senator Muskie, stated explicitly on the floor that, "The State makes the decision as to whether or not he is right," in referring to the FLM decision. As Senator Muskie said:

The State has the option under this bill to decide that he is wrong and to proceed with its decision.

Mr. FANNIN: If the permit applicant does not meet the class I increment, but the State feels there would be no adverse impact on the air-quality related values, may the State grant a permit over a Federal land manager's objection?

Mr. McCLURE. Yes; the State may grant a permit over the FLM objection. Again referring to the floor manager's statement—

The Federal Land manager has the responsibility to protect his area's clean air values.

If he feels that it is necessary for him to intervene, then he is obligated to do so. But, the final decision still rests with the State.

Mr. NUNN. Is it not true that, at the present time, EPA has regulations which implement a nondeterioration program?

Mr. MUSKIE. Yes; that is correct.

Mr. NUNN. Is it not also true that if section 6 of the pending bill is struck, these EPA nondeterioration regulations will remain?

Mr. MUSKIE. That would be the situation.

Mr. NUNN. Is it not true that the allowable air quality increments for class I and class II are the same under EPA regulations and under the Senate proposal?

Mr. MUSKIE. Yes.

Mr. NUNN. Furthermore, is it not true that under EPA regulations, any redesignations from the present class II to the stricter class I or the more lenient class III are subject to Federal approval and control?

Mr. MUSKIE. The Senator from Georgia is again correct.

Mr. NUNN. Is it not also true that under the pending bill, such reclassification is left to the discretion of the individual States?

Mr. MUSKIE. That would be the effect of the committee's bill.

Mr. NUNN. It is also my understanding that under EPA regulations, industry may not build in or near a class I area if it cannot meet the class I incremental scheme?

Mr. MUSKIE. Yes; the Senator understands correctly.

Mr. NUNN. Is it not true that under the pending bill, an industry may build near class I area, even if the increments are exceeded, if the State is convinced that this will not impair the air-quality values in the class I area?

Mr. MUSKIE. That is also true.

Mr. NUNN. It would then appear to the Senator from Georgia, that, since the incremental standards are the same under both the Senate bill and the EPA regulations, the major difference involves the individual State's ability to better control the decisions involving a balance between clean air and necessary industrial growth. If section 6 is struck, as the Moss amendment would do, we would be left with the EPA regulations which do not allow this increased State participation. I thank the distinguished Senator from Maine.

Mr. TAFT. I have long believed in a commitment to cleaner air in our environment. I believe that we can proceed with a policy of no major significant deterioration and still continue to progress and grow as a Nation. I believe the bill without the Moss amendment will do this. This policy must be implemented by the States in such a way so as not to prevent growth or to cause economic depression, and I believe this can be accomplished. That is why I support the committee bill, S. 3219, over the Moss amendment, and the EPA regulations.

The Moss amendment would delete section 6 of the bill, the significant deterioration section, in favor of leaving standing the EPA regulations which were promulgated as a result of the court decision in *Sierra Club against Ruckelshaus*, and which were affirmed by the U.S. Court of Appeals for the District yesterday. Industrial groups, environmentalists, and the executive branch have asked that the Congress legislate the issue of nondegradation, rather than leave it to the regulations to define. After many studies and many markup sessions, the Senate Public Works Committee has written a bill which sets general standards and gives responsibility for protecting air quality to the

States, instead of letting the Federal Government dictate how our land will be used. Under the bill's provisions, National parks and wilderness areas of over 5,000 acres would be protected from the deterioration of their air quality. This is as it should be. The EPA regulations would permit the Federal land manager to designate any Federal area as a class I area.

We all realize that "clean air" areas are becoming harder to find, just when many Americans are seeking more of these areas closer to their hometowns and cities. The quality of life is too important for us to allow our clean air areas to become dirty. We have spent too much time, effort, and money cleaning up the areas which already have dirty air, and now we are asking whether we should allow the few areas which are considered clean to become dirty. It is a ridiculous question.

The significant deterioration test in the bill affects only new, major industrial sources. It does not preclude construction of major facilities in areas adjacent to class I areas. If a proposed source would exceed the class I pollution increments, it may still be built if the source can show that its emissions will not damage the air quality values of the park or wilderness area. This determination would be made on a case-by-case basis. Under this bill, businesses will know the rules by which they can construct new plants, rather than relying on regulations tied up in the courts indefinitely.

The Senate has defeated the Scott amendment, which would have struck down the policy of nondegradation both in the EPA regulations and in section 6 of S. 3219. Therefore, the Senate now must choose between the nondegradation policy in the regulations or in the bill. The bill provides flexibility for the States to determine where major facilities should be built.

The committee bill sets up the National Commission on Air Quality to study and report to the Congress within 3 years on the adequacy of the clean air programs. I believe this continuing review of the program, to assure that appropriate "midcourse corrections" can be made if necessary, is important. Senator Randolph has an amendment to mandate this study within 2 years, and I expect to support that amendment.

I ask to have printed in the Record an article entitled "Keep Clean Air Clean," published in the Cleveland Plain Dealer on June 2, 1976.

[From the Plain Dealer, June 29, 1976]

#### KEEP CLEAN AIR CLEAN

Any day now, a bill to amend the Clean Air Act of 1970 will come up for a vote in the U.S. Senate. An important provision for relaxing pollution emission deadlines appears pretty much a compromise: In the environmentalist view, it goes too far; in the view of the Ford administration and industry, it does not go far enough.

Another important provision remains highly controversial. This section, written by the Senate Public Works Committee, is intended to maintain air purity in areas of the country which have cleaner air than required by the 1970 standards—in other words, to establish a policy of "nondegradation" for air quality in these areas.

This feature would protect national parks and wilderness areas. Also, it aims to assure that new growth within the nation be as clean as possible, and that air will not become equally dirty throughout the country.

These are reasonable goals. They do not, as many opponents allege, seek to stifle industrial and economic progress and impose new federal land-use rules. The "nondegradation" proposal would have states, not the federal government,

determine in which of two classifications clean-air areas belong, except that national parks and wilderness areas would automatically go into Class I where the most strict standards would apply. Industries would have to be located far enough away to avoid contamination of the park and wilderness properties.

Sen. Frank Moss, whose home state of Utah has vast energy resources located near national parks, opposes this. He has introduced an amendment to delay nondegradation, pending an impact study. In effect, this would kill the best effort yet to keep clean air clean.

The United States has made significant strides toward air quality improvement. It would make no sense now to let this progress be offset by allowing clean air regions to become dirty. Especially is this true in the case of national parks and wilderness areas which are among the all too few places where Americans can go to find wildlife in natural habitat, see clear, clean skies and draw full breaths of pure, fresh air.

Senators should be so reminded and vote for nondegradation and the health and welfare of their fellowman.

The PRESIDING OFFICER. The question is on agreeing to the Moss amendment. The yeas and nays have been ordered.

Mr. LONG. On this vote I have a pair with the distinguished Senator from California (Mr. Tunney). If he were present and voting, he would vote "nay." If I were permitted to vote, I would vote "yea." I withhold my vote.

Mr. GRIFFIN. I announce that, if present and voting, the Senator from Nebraska (Mr. Curtis) would vote "nay."

The result was yeas 31, nays 63, as follows:

[Rollcall Vote No. 455 Leg.]

YEAS—31

Allen	Garn	Moss
Bartlett	Goldwater	Schweiker
Bentsen	Griffin	Sparkman
Brock	Helms	Stennis
Byrd, Harry F., Jr.	Hollings	Stone
Byrd, Robert C.	Hruska	Talmadge
Cannon	Huddleston	Thurmond
Dole	Johnston	Tower
Eastland	Laxalt	Young
Fannin	McClellan	
Ford	Metcalf	

NAYS—63

Abourezk	Gravel	Morgan
Baker	Hansen	Muskie
Bayh	Hart, Gary	Nelson
Beall	Hart, Philip A.	Nunn
Bellmon	Hartke	Packwood
Biden	Haskell	Pastore
Brooke	Hatfield	Pearson
Buckley	Hathaway	Pell
Bumpers	Humphrey	Percy
Burdick	Jackson	Proxmire
Case	Javits	Randolph
Chiles	Kennedy	Ribicoff
Church	Leahy	Roth
Clark	Magnuson	Scott, Hugh
Cranston	Mansfield	Scott, William L.
Culver	Mathias	Stafford
Domenici	McClure	Stevens
Durkin	McGee	Stevenson
Eagleton	McIntyre	Taft
Fong	Mondale	Weicker
Glenn	Montoya	Williams

PRESENT AND GIVING A LIVE PAIR, AS PREVIOUSLY RECORDED—1

Long, for..

NOT VOTING—5

Curtis  
Inouye

McGovern  
Symington

Tunney

So Mr. Moss' amendment was rejected.

#### ADDITIONAL STATEMENTS SUBMITTED ON S. 3219

Mr. BUMPERS. I would like to comment briefly on section 6, the nondeterioration provision. Many have spoken on this issue during the past several months.

In particular, I would refer Members to the excellent technical statements in support of the nondeterioration provision by Senators Muskie and Buckley of the Public Works Committee.

I would, however, like to bring to your attention some additional information, and reasons why I feel the maintenance of clean air regions in this country to be essential.

Last fall, the Honorable George Brown of California held a most sophisticated and impressive set of hearings on the effects of chronic low level pollutants in the atmosphere. The hearing record ran to some 1,500 pages, and came to some important and surprising conclusions. The most significant and disturbing findings were in the area of low level air pollutant damage to our agriculture and forests. Let me quote directly from the summary of the report—page 1022:

This agriculture and forestry groups agreed that large-scale damage to productivity is occurring at *pollutant concentrations much below ambient standards or commonly observed ambient levels*. Moreover, damage is widespread and often not related to proximity to sources of pollutant emissions. (Emphasis added.)

This conclusion is consistent with recent findings of decreased timber production in the Northeastern States and in the Scandinavian countries. In both these regions the decline in timber productivity is highly correlated with the introduction of high sulfur fuels, and the increasingly acid rainfall which appears to be a consequence of their use. The Society of American Foresters make an especially pertinent comment on this matter when they state:

There is legitimate concern that limits of ambient pollution in local areas leads toward "tall stack" solutions that only tend to distribute the problems of chronic pollution and acidic precipitation over ever widening zones. . . . And there is need to avoid mere cosmetic emission control of particulates at the expense of creating more invisibles that create chronic air pollution and acid rain.

Only this morning I returned from Arkansas, a State which I am pleased to say, still contains many large regions whose air quality would be protected by the nondeterioration provisions of this act. While I was home, there was much discussion about the impact the nondeterioration provision will have on our industry. I came away convinced that the class II regions permit more than adequate industrial growth for Arkansas.

More to the point is the fact that the nondeterioration provision is critical to the economic well-being of my State. The top three revenue producers in Arkansas are forestry-agriculture, tourism, and industrial-manufacturing. I have already spoken to the adverse impact of

chronic low level air pollutants on forestry and agriculture. Tourism in Arkansas is also highly dependent upon our abundant clean air and water resources, as is our growing housing industry. Both younger people and the retired are flocking to Arkansas to escape more developed, environmentally degraded regions of the country.

The point may legitimately be raised that if Arkansas is so anxious to have clean air, why do we not just go ahead and promulgate non-deterioration provisions for yourselves, and leave the rest of you alone. The best answer which I can provide to this challenge is that prepared by the 16 States that filed a brief as amici curiae in the Supreme Court case *Ruckelshaus* against *Sierra Club* in support of the nondeterioration principle.

The Administration promulgated the criteria for protection of existing high quality air as a requirement of the ambient air quality standards in 40 U.S.C. 50.2(c) (Supp. 1972), which provides that air of higher quality than the ambient air quality standards shall be protected from significant deterioration. This requirement of no significant deterioration is essential to the promotion of both the public health and welfare and the productive capacity of the population.

The protection of air resources requires a uniform national requirement of no significant deterioration. Such a requirement protects the air quality in rural areas from being polluted down to the minimum quality level of the standards. It protects the traditional economic base of these areas from the destructive effects of pollution levels at or near the standards. It prevents these areas from attempting to attract industry by enacting lenient emission control requirements that encourage pollution to the minimum quality levels of the standards. It also protects those states that have developed no significant deterioration criteria from the pollution of their neighboring states.

The Administrator's failure to require that state implementation plans protect clean air from significant deterioration frustrates and defeats the purpose of the Act. It results in clean air areas of the country being placed in the position of competing for industrial development by lenient emission control requirements that encourage pollution to the level of the standards. It threatens the economic security of clean air areas that are dependent upon industries that depend on the high quality air resources. It threatens the economic security of the industrial centers of the nation by making it difficult for them to compete for new industry and to develop stringent regulations to clean up their existing industry. It frustrates the efforts of states to protect their own resources from significant deterioration.

In other words, Arkansas and other clean air States need to have their air protected from emissions originating in other States, and second, we need to avoid the destructive practice of trying to lure industry from one State or one region to another by permitting some States to promise less stringent air quality standards.

I am aware that the proposed nondeterioration standards will mean that greater attention will have to be given to siting of new emitting facilities. There will unquestionably be some increase in the cost of electricity and manufactured goods. By the same token there will be jobs and investment opportunities created to meet the task of meeting these stricter standards.

I might add also that it is usually a good deal less expensive to prevent this pollution and the damage it can cause, than it is to clean up after a power plant or factory has been built.

Finally, I recognize that we need to burn more coal for electrical power generation, and the costs of stricter controls required under section 6 will fall heavily on this particular source. In fact, for those of us concerned about nuclear power, this provision may shift the balance a bit more in favor of that source economically. All of these

problems are, in my view, worth the price we must pay to maintain the quality of our air in clean air States like Arkansas.

There are those who claim that we need more time to determine the consequences of enacting the nondeterioration provision. Others state that we need to be more certain of the "proof of effect" before we enact this legislation. Finally, others argue that after all, nature pollutes some clean air areas so why should not we let people pollute these areas as well?

I think we are courting disaster if we follow any of this counsel. These points are well addressed by the House report to which I referred earlier.

In some cases totally verifiable cause-and-effect evidence for harm due to chronic pollution may be impossible to obtain; even though the potential danger is very great. In these cases, several groups recommended that standard setting be based on probability of risk, rather than 'proof-of-effect.' The American Medical Association, citing the difficulties in obtaining epidemiological evidence and the long time span required, stressed that, 'Ideally, the basis of standards should move from proven effects to probabilities of risk. To do this, the nation will have to improve its capabilities to evaluate the probability of risk.' Similarly, in the field of forestry, 'There is concern in the forestry community that a shift toward "proof-of-effect assessments" as a basis for emission control is short-sighted and could be disastrous to forest ecosystems where we cannot make adequate estimates of pollution impacts and where the effects might not become evident until long after emissions have begun.' "

Finally, I see the nondeterioration provisions of this Act as providing the only hope we have for maintaining the diversity of air quality options which the people of this Nation deserve. As people exercise their options by moving to clean air regions, the nondeterioration provisions of this act will also guarantee that the very values which they moved for will not be destroyed by their coming.

I ask that there be printed the summary of statements received at the hearings on effects of chronic pollution chaired by the Honorable George Brown of California, and the accompanying statement by the Society of American Foresters.

#### SUMMARY OF STATEMENTS RECEIVED FROM PROFESSIONAL SOCIETIES FOR THE HEARINGS ON EFFECTS OF CHRONIC POLLUTION

Congressman George Brown's Subcommittee on the Environment and the Atmosphere solicited contributions from a large number of professional societies. The goal was to broaden the information base of the normal Congressional hearing procedure, and to bring the best and most timely scientific information available into the political decision-making process. By inviting the societies to use any convenient working method—task forces, questionnaires, review panels, collecting individual scientists' statements, etc.—Congressman George Brown and his Subcommittee hoped to set up a model for rapid, informal input of professional society expertise in questions of public policy.

The material submitted by the societies far transcended, in depth and policy impact, what could possibly have been obtained in ordinary hearing proceedings. Much of the material was not only generated but also reviewed by the most authoritative leaders in the fields of health, agriculture and meteorology, and thus represents the highest consensus of scientific opinion as to critical problems in this area. The following points represent some of the most strongly stated common themes of these contributions.

(1) *Assessing the effects of pollution in the chronic, low-level range is a much neglected area.* Though contributors from almost all areas—health, agriculture, general ecology, and meteorology—agreed on the possibly enormous costs and complexities of chronic effects, most observed that the resources seemed to be inevitably directed toward short-term crises. The levels of uncertainty regarding low-level pollutants are extremely high, and research programs are very often not targeted towards resolving these uncertainties.

(2) *Lack of coordination among Federal agencies in this inherently interdisciplinary area has made solid research progress almost impossible.* The American Society of Agronomy stressed, "We in Agriculture have been frustrated by the lack of sufficient research in the Health Effects Branch of EPA. We find the environmental health research effort is too small and is fragmented among, EPA, NIH, and FDA." The American Fisheries Society similarly emphasized that "there is a great need to improve communication between scientists, regulatory groups, industry, and the general public on matters concerning health and the environment. The present structure of many regulatory groups responsible for various phases of environmental and health protection is causing confusion and frustration in the general public."

(3) *Monitoring of base-line and perturbed human, agricultural and biosphere health is essential to reaching an understanding of environmental pollutant threats to health in all these areas.* As a top priority recommendation, the American Phytopathological Society wrote, "To obtain information needed for revision of standards, data on pollutant concentrations . . . need to be obtained. Combined pollutant monitoring with instruments and plants should be done at strategic locations all over the country as a continuous check on the effectiveness of pollutant standards." Similar considerations apply to substances which may affect the total biosphere through effects on climate. An American Meteorological Society Committee emphasized that "it is essential that the global distribution of various trace chemical species in the stratosphere and troposphere be measured, monitored, and interpreted." And in human health itself, the American Society of Biological Chemists stressed that exposures to chemicals are so pervasive, and traditional cause-effect diagnoses of pollutant-caused disease are so ineffective in the chronic realm, that careful statistical analyses of health trends are essential to help us see the dangers we are inflicting on ourselves.

(4) *Transport, transformation and synergetic effects of trace pollutants may be the key to our understanding of their effects, and yet our research has tended to focus on their properties at the source of emission and in isolation from each other.* The A. B. Little Corporation, submitting a statement on behalf of Kennecott Copper, Phelps Dodge, and the Electric Power Research Institute, stressed that all health effects attributed to SO<sub>2</sub> emissions may actually be due to effects of SO<sub>2</sub> combined with other pollutants. The problems of widespread transport and dangerous transformation of pollutants was emphasized by the Society of American Foresters: "there is legitimate concern that limits of ambient pollution in local areas leads toward 'tall stack' solutions that only tend to distribute the problem of chronic pollution and acidic precipitation over ever-widening zones.— And there is need to avoid mere cosmetic emission control of particulates, at the expense of creating more invisibles that result in chronic air pollution and acid rains."

(5) *In some cases totally verifiable cause and effect evidence for harm due to chronic pollution may be impossible to obtain; even though the potential danger is very great.* In these cases, several groups recommended that standard setting be based on *probability of risk*, rather than "proof-of-effect." The American Medical Association, citing the difficulties in obtaining epidemiological evidence and the long time span required, stressed that. "Ideally, the basis of standards should move from proven effects to probabilities of risk. To do this, the nation will have to improve its capabilities to evaluate the probability of risk." Similarly, in the field of forestry, "There is concern in the forestry community that a shift toward 'proof-of-effects assessments' as a basis for emission control is short-sighted and could be disastrous to forest ecosystems where we cannot make adequate estimates of pollution impacts and where the effects might not become evident until long after emissions have begun."

(6) *The research needed to answer the critical questions of effects of chronic pollutants must be of a long-term, steadily sustained, nature.* Because chronic pollution effects are inherently so complicated to assess, "crash programs" of strictly targeted research are not likely to be helpful. The American Society for Microbiology stressed the need to avoid crisis research, and that "better research and more data are needed to fill the gaps, on which to base new standards, and on which to make predictions." The Institute of Ecology sent the Subcommittee's questionnaire to 220 of its members, with more than 50 responses received. One of the strongest points made by the respondents was the following: "One of the most important [needed] changes involves the time-frame of research, monitoring and control activities. When we are dealing with chronic effects which may take decades to make their magnitude fully apparent, we must move beyond fiscal plans based on a two year cycle."

In the specific areas, starting with human health, the following needs were cited by numerous societies:

(1) Epidemiological studies need to be sharply expanded, better designed, and efforts of Federal, state, county and local agencies need to be much better coordinated in order to obtain a true picture of pollution threats to health. The American Medical Association wrote that, "there is no other way [than epidemiology] to obtain the needed dose-response or exposure-response relationships between complex urban atmospheres and specific health effects."

(2) General screening of mass produced chemicals for mutagenic and carcinogenic effects should be started at once. Numerous societies pointed out that rapid and inexpensive bacterial screening tests could be used as a preliminary alert of possible genetic effects of chemicals produced in large volumes, with more extensive animal testing to be used as a follow-up in suspicious cases, as mutagenic compounds are often carcinogenic as well.

(3) Trained manpower in epidemiology and public environmental health is in short supply. Traditional medical curricula do not emphasize the statistical aspects of public health which are so important in evaluating environmental health threats.

In the area of agriculture, the following points were most strongly made:

(1) The agricultural and forestry groups agreed that large-scale damage to productivity is occurring at pollutant concentrations much below ambient standards or commonly observed ambient levels. Moreover, damage is widespread and often not related to proximity to sources of pollutant emissions.

(2) Research is most urgently needed in assessing the costs in agricultural productivity due to pollutants. This is especially critical as we move out of an era of agricultural surpluses, and is essential in striking proper cost-benefit balances in standard setting.

(3) In a particular area, that of using sewage sludge as fertilizer for agricultural land, lack of research data is causing confusion among both farmers and sewage authorities. The disposal of sewage sludge as fertilizer may be essential to the successful economics of some sewage treatment systems, but the conditions of safety of this procedure for land used for food crops is not established, and current research programs are not addressing the problem sufficiently.

In the area of possible climate effects due to chronic pollution, these two points were stressed:

(1) The costs of even small climate changes could be enormous, in terms of agricultural productivity alone. For this reason investment in global monitoring systems of climate trends, and of manmade or natural changes in the atmosphere components, could have a very high return in terms of critically needed data.

(2) In particular, there is near unanimity that carbon dioxide concentrations in the atmosphere are increasing rapidly. Though even the direction (warming or cooling) of the climate change to be caused by this is unknown, very profound changes in the balance of climate factors that determine temperature and rainfall on the earth are almost certain within 100 years. Monitoring programs started now, before the carbon dioxide effect begins to be substantial, could provide essential warnings of needed changes in human activity before disastrous effects occur.

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SOCIETY OF AMERICAN FORESTERS,  
Bethesda, Md., November 6, 1975.

Hon. GEORGE E. BROWN, Jr.,  
Chairman, Subcommittee on the Environment and the Atmosphere, House of Representatives, Washington, D.C.

DEAR MR. BROWN: In response to your letter of August 1, I am enclosing the requested statement on the interest of the Society of American Foresters in the consequences of chronic low-level pollution, along with some recent publications on the subject. The statement was prepared by the Society's Working Group on Forest Pathology. The authors were Professor William H. Smith, School of Forestry and Environmental Studies, Yale University, and Dr. Richard G. Krebill (Forest Service, USDA) Chairman, Forest Pathology Working Group, Society of American Foresters.

Dr. Krebill has been in touch with Dr. Thomas Moss of your office concerning the coverage and timing of the statement, which is due in mid-November.

Sincerely yours,

JOHN A. BEALE,  
President, Society of American Foresters.

## EFFECTS OF CHRONIC LOW-LEVEL POLLUTION ON FORESTRY

A statement prepared by the Pathology Working Group of the Society of American Foresters for use of the Subcommittee on the Environment and the Atmosphere of the House Committee on Science and Technology, as requested by Congressman George E. Brown.

The forestry community as represented by the Society of American Foresters has a deep interest in the potential consequences of low-level, chronic air pollution.

We are gravely concerned about potential impacts of pollutants to forest ecosystems and about the potential indirect harmful effects to the numerous goods and services obtained from forest resources. Pollution was identified as one of the top five forestry issues facing us, in an opinion poll amongst our membership in 1974. Some of our thoughts are expressed on the following pages which are arranged according to the proposed Hearings outline.

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 AGRICULTURE AND THE BIOSPHERE

I. From the viewpoint of forestry, chronic, low-level pollutants are of considerable concern, but an area of such a limited information that it is possible to do little more than make educated guesses on the consequences. Depending on the kind of pollutant, its amount, the time it's present, and numerous other variables, the effect might vary from a stimulatory "fertilizer" effect, to an innocuous effect, to a subtle or significant loss in timber growth, to a loss of genetic diversity within sensitive forest species, to possible major change in species composition and major upset in ecosystem functioning. Chronic effects of air contaminants on forest ecosystems may occur over expansive areas and be interstate or international in character.

In forestry, where it is customary to think in terms of life-spans of hundreds of years for forest trees and cutting cycles of several decades, it is recognized as especially important to consider long term consequences of pollutants and not to neglect some of the less conspicuous components. Certainly we need to address the photooxidants such as ozone and peroxyacetylnitrate, the sulfur oxides, the nitric oxides, the fluorides, ethylene, aldehydes, mercaptans, ammonia and heavy metals. But we also mustn't fix too tightly on particular pollutants, since the kinds of mixes are certain to change as man's cultures evolves. Take, for instance, the radioactive pollutants that have only recently entered into ecosystems and the fluorocarbons which are also new but of possible grave consequence if indeed they are destroying the UV protective ozone layer in the stratosphere.

Part of the threat is direct reduction in photosynthesis and necrosis of tissues with accompanying loss of vitality and less of growth in exposed trees. Over long periods of exposure to low-level pollutants, it is possible that the more sensitive portion of populations could be eliminated by direct effects of the pollutant. In some species such as eastern white pine, we know that there is considerable genetic variation with respect to sensitivity to air pollution. Both laboratory and field exposures indicate that chronic exposure to a single pollutant might remove a significant portion of the genetic makeup of an exposed population over a fairly short period. Exposure to another pollutant might have a similar impact, so that ultimately a series of exposures to chronic levels of new pollutants could greatly reduce the genetic diversity of a species. (See Dochinger 1972 and Hepting 1964).

Added to direct effects of chronic pollution in trees are indirect effects such as possible increases in susceptibility to insects and diseases. Insects such as bark beetles and diseases such as root rot are known to attack and kill trees weakened by air pollution. For instance, much of the loss in ponderosa pine in the San Bernardino Mountains of southern California is from the western and mountain pine beetles and from annosus root rot that attack pollution-weakened trees. Another item of major concern in forests is the long-term effect on competition amongst species and on reproduction capacity. In the San Bernardino Mountains, for instance, it appears that incense cedar and black oak remain prolific and in other ways less sensitive to photooxidant pollution than does ponderosa pine. With continued pollution, the forest is changing from ponderosa pine toward incense cedar and oak. Shrubs are apparently even less sensitive and win out on many sites. In either case, an adverse change in forest type occurs. (See Miller 1973).

Indirect effects can be very subtle. For instance, bees are quite sensitive to sulfur dioxide, and many plant species are dependent upon bees for pollination.

Maintenance of a healthy ecosystem requires a continuing input of nitrogen to replace that which is lost, such as to ground water and to the atmosphere. Much of the nitrogen comes through biological fixation by specialized plants or bacteria. In wet Douglas-fir forests, for instance, blue-green algae of lichens contribute an important portion of the nitrogen input. Unfortunately, lichens and possibly some of the other nitrogen fixers are suspected of being especially sensitive to pollutants. The long term consequence of chronic pollution could be a much less productive system.

The threat of air pollution as a precursor of acidic precipitation is especially great for fragile ecosystems of higher elevations and latitudes and especially in the aquatic environment of lakes and streams. Considerable data is being gained in southern Norway and Sweden, where it appears that pollutants originating across western Europe are transported with storms, transformed into acids, and entering ecosystems as acidic precipitation. Much is in the form of snowfall; acids concentrate in snowpacks so that early runoff is extremely acidic. The effect is dramatic to fish and most other aquatic organisms. Many former trout fisheries are now barren except for tolerant fungi and sphagnum moss. Salmon runs, too, are diminishing in many impacted rivers. And the Scandinavian scientists express a major concern that the acidic precipitation is leaching nutrients needed for sustained forest growth. We share their concern and are alarmed by early warnings, such as in the White Mountains of New Hampshire where we are experiencing early stages of the same phenomena (see Abstracts of Acid Precipitation Symposium—Columbis, Ohio, May 1975).

And there is also concern within the forestry community that we might overreact to air pollution and hastily exclude beneficial forest burning in the name of preventing air pollution. Fire is considered by the experts as part of the natural process by which forests have evolved. Prescribed burning has many highly desirable features such as releasing nutrients from dead materials, reducing hazards of catastrophic wildfires and reducing competition of understory brush species. And smoke from forest burning is not toxic to vegetation and in fact, likely has an important role in maintaining beneficial microorganisms at the expense of pathogens such as rust fungi (see Parameter and Uhrenholdt, 1975).

Of course, when handled improperly, smoke from forest burning is an esthetic nuisance and irritating to man. But when handled under proper meteorological conditions, smoke can be directed away from habitation and result ultimately in a beneficial nutrient fallout or washout. The strongest point for prescription burning is that it reduces fuels and thereby limits chances of devastating conflagrations. Even with the best of fire control efforts, such fires occur and produce enormous loading of smoke to the air, and often where and when the smoke is needed least. Much of this can be avoided through educated prescribed burning.

II, III, IV. Air pollution has had, is having, and will continue to have an influence on forest ecosystems throughout the temperate regions of the world in both rural and urban locations. The nature of this relationship can be divided into three classes.

Under conditions of low dosage, Class I relationship, the vegetation and soils of forest ecosystems presumably function as a very important sink for air contaminants. When exposed to intermediate dosage, Class II relationship, individual tree species or individual members of a given species may be adversely and subtly affected by nutrient stress, reduced photosynthetic or reproductive rate, predisposition to entomological or microbial stress, or direct disease induction. Exposure to high dosage, Class III relationship, may induce acute morbidity or mortality of specific trees. The ecosystem impact of these various relationships would be very variable (Table 1). In the Class I relationship, pollutants would be transferred from the atmospheric compartment to the biotic (organic) or available nutrient compartments. Depending on the nature of the pollutant, the ecosystem impact of this transfer could be undetectable (innocuous effect?) or stimulatory (fertilizing effect).

If the effect of air pollution exposure on some component of the ecosystem biota is inimical then a Class II relationship is established. The ecosystem impact in this instance could include reduced productivity or biomass, shifts in species composition, increased secondary effects such as insect outbreaks or disease epidemics or increased morbidity and reduced vigor. The ecosystem impacts of Class II relationships are extraordinarily important because of their potentially widespread significance. Taken together, the Class I and II relationships comprise the chronic low-level air pollution-forest ecosystem relationship.

In the presence of high air pollution dosage, Class III relationship, impact on the structure of the ecosystem may be gross simplification and disturbances to the function of the ecosystem may include basic changes in hydrology, nutrient cycling, erosion, micro-climate and overall stability. Specific examples in all of these classes are presented in Smith (1974).

A more complicated situation occurs with pollutants such as fluorocarbons, where the concern is not the direct exposure but rather the uncertain hypothesized effect on the stratospheric ozone layer and the resultant effect of increased ultraviolet radiation received at ground line. Through measurement and modeling it appears possible to predict the physical effect, but the biological consequences of an altered UV regime is a great unknown. Somewhat akin to this is the acidic precipitation problem where again it is not direct exposure to a pollutant that is of concern.

While these numerous ecosystem impacts resulting from air pollution stress have been identified, few have been quantified in the field. We are especially deficient in our ability to generally assess Class I and II relationships. This hiatus of knowledge is due to several factors in addition to the obvious difficulty of making accurate measurements of subtle processes in expansive and frequently remote forest ecosystems. Among the most important factors are: (1) the extraordinarily variable response different plant species and individuals within species have to individual air pollutants, (2) the strong controlling influence that local edaphic, topographic and meteorological conditions exert on plant response to air contaminants, (3) the fact that numerous tree species and most forest shrub and herb species have not been evaluated in regard to response to air pollutants, (4) the realization that most of our data stems from studies with a very few pollutants reacted singly and that some gaseous and particulate contaminants and mixtures of pollutants have received little research attention, (5) that much of the research has been conducted employing air pollution dosages in considerable excess of ambient forest levels, and that (6) most of the investigations have been carried out under highly controlled and hence artificial environments. These six difficulties must be taken into consideration in future research.

V. Research should concentrate on Class I and II relationships as these are considerably more significant than Class III situations. With the recognized deficiencies in our information, we can speculate on the total impact of air pollution on forest ecosystems, but presently we cannot model or quantify it. Research whose results will detail the relationships between air pollution and forest ecosystems *must* be given high priority because of the size and significance of these ecosystems in temperate and urban regions and the numerous potentially damaging interactions that have been identified.

The following research problems are considered critical for an acceptable understanding of the relationship between air pollution and trees.

1. Dose-response information on visible (symptomatic) response with experiments appropriately designed to accommodate and consider the influence of genetic factors, environmental factors and interaction of air contaminants.

2. Dose-response information on invisible (asymptomatic) response, including an evaluation of the ability of air pollution stress to reduce growth and influence reproduction.

3. Analysis of the ability of air pollution stress to predispose or aggravate stresses caused by insect, microbial or other abiotic stresses.

4. Determine direct and indirect effects of various chronic pollutants on birds, wildlife, esthetics, etc. in forest ecosystems.

5. Development of accurate, simple and reproducible methodology to identify and inventory visible (symptomatic) injury in the field.

6. Determine the physiological and biochemical bases of air pollution stress.

7. Determine effects of increased ultraviolet radiation to forest species.

8. Develop models to integrate effects and generate impact data for various doses of an array of the more significant pollutants in representative forest ecosystems.

9. Develop reliable and economically sound cultural procedures for protecting valuable trees and forests where chronic air pollution is inevitable.

10. Determine the usefulness of the use of resistant varieties to reduce air pollution stress of trees.

11. Determine ability of woody plants to reduce atmospheric contamination.

To answer these many questions, acceleration of research on chronic air pollution in forests is needed in both the resource-oriented agencies and the universi-

ties. Both are well suited for these kinds of research and realize that the continuation of forestry may be at stake.

VI. There is concern in the forestry community that a shift toward "proof-of-effects assessments" as a basis for emission control is short-sighted and could be disastrous to forest ecosystems where we cannot make adequate estimates of pollution impacts and where the effects might not become evident until long after emissions have begun. One problem is that it is nearly impossible to set a limit for pollutants such as fluorides that continue to accumulate in living plants until they become toxic. Another problem is that ambient levels have no direct relations to problems such as acidic precipitation or reduction of our UV shield in the stratosphere.

In fact, there is legitimate concern that limits of ambient pollution in local areas leads toward "tail stack" solutions that only tend to distribute the problem of chronic pollution and acidic precipitation over ever widening zones. There is also concern that standards that limit a particular pollutant such as  $\text{SO}_2$ , can result in increased emissions of the reactive sulfates that can be equally, if not more harmful. Over the long haul pollution can only be adequately handled by control of emissions or by substitute technology with lesser pollution potential. And there is need to avoid mere cosmetic emission control of particulates, at the expense of creating more invisibles that result in chronic air pollution and acid rains.

Our current Clean Air legislation is good, even if difficult to implement. It is criticized by some as being conservative, but for the sake of our forests it is certainly better to err on the safe side. What is needed more than major new legislation is a stronger commitment to developing an adequate understanding of pollution and its consequences, and a continuing commitment to regaining and preserving a more natural atmospheric environment. Standard-setting could include greater exposure to the public, and it would be beneficial to expose draft standards and regulations to vitally interested groups such as the professional natural resource societies.

Mr. BEALL. The Clean Air Act, as reported from the Public Works Committee, reflects a continuing desire and commitment on the part of the Senate to protect our Nation's environment. Many provisions contained in the bill are far-reaching and, by their very nature controversial. But in my judgment, no portion of the bill is more important to the air quality of this Nation than section 6, "no significant deterioration."

Over the last few months, much evidence on both sides of the issue has been presented to me regarding the nondegradation provisions. I have carefully weighed these arguments, both from an environmental and economic point of view, and have concluded that a national policy of nondegradation in "clean" areas is a desirable and necessary step. Therefore, I support section 6, and oppose the Moss amendment.

We have made tremendous strides in recent years in cleaning up our Nation's air but we still have a long way to go. The Congress, in setting up air quality standards based on health, did not mean that industry should have a green light to flirt with these thresholds. Rather, we have set minimum standards which must be met, and which will serve as a take-off point for future efforts. I am deeply concerned that unless we clearly require that clean areas stay clean, we will have a gradual deterioration in our national air quality. We will, in short, be going backward instead of forward in our clean air effort.

Section 6 simply says that, in areas which have achieved ambient air standards, the air quality of the area may not deteriorate beyond certain specified increments. It does not apply to areas which have not achieved those standards. Section 6 also only applies to major emitters, and gives the States, not the Federal Government, primary responsibility and authority for implementation of the act on a case-

by-case basis. Finally, the section would affect only new, not existing, sources.

Those who support the Moss amendment language calling for a study of the matter before implementation of the nondeterioration language argue that we do not know the full impact of that section. Yet the fact is that there have been many studies already conducted on the possible impact of nondeterioration. The Environmental Protection Agency alone has spent about \$1 million on at least 21 nondeterioration studies. Additionally, private groups have done at least 23 studies on the Senate proposals. The Moss amendment would only continue the existing confusion, and delay significantly the development of a clear national policy on nondeterioration.

However, I fully recognize that the Senate has a responsibility to closely follow the effect of implementation of section 6, and thus I support the amendment offered by Senator Randolph which allows section 6 to go into effect, but directs a national Commission on Air Quality to report back in 2 years on the impact of the nondeterioration section. If adjustments need to be made, this study will indicate them, and the Congress can act accordingly.

We must commit ourselves not only to cleaning up dirty air, but also protecting clean air from getting dirtier.

Mr. DOLE. As our Nation heads into the last quarter of this century, we are faced with a host of competing national goals including energy development, full economic recovery, and environmental protection. While efforts to accomplish these goals need not necessarily be mutually exclusive, we are working with limited resources and often with contradictory values. Consequently, all aspects of each of these goals must be thoroughly examined and weighed against each other so that we may have a workable program, composed of relative priorities, as national development proceeds in the future.

#### NONDETERIORATION PERMIT PROGRAM

Certainly, the effort to sustain the quality of the air we breathe has been, and will continue to be, a matter of primary attention and importance. For concentrated industrial areas, this will involve an effort to clean up ambient air quality to the extent possible, while for relatively "clean" areas like Kansas, the effort will involve a reasonable approach to maintaining healthy air standards in the face of future development. Air quality maintenance must be a principal environmental goal of this Nation. Yet, the approach to this goal must be practical and well-balanced.

In order to facilitate a coordinated approach to air quality management, Congress has, during the last 10 years, initiated legislative guidelines to cover several aspects of air quality management. While recognizing that States and localities must exercise a large share of responsibility in regulating air quality, Congress has nevertheless sought to provide the stimulus and the encouragement for active management programs, and I have supported these legislative initiatives in the past.

Most recently, in 1970, Congress established "public health and welfare" standards—air quality levels for public safety which "dirty" areas were encouraged to work toward. At the same time, the 1970

clean air legislation established a national mandate to "protect and enhance the quality of the Nation's air resources." A subsequent interpretation of that language by the Supreme Court—on a four-to-four decision—has led to a more concrete formulation of a "nondeterioration concept" for clean air areas which, although not specifically spelled out by Congress in 1970, is nevertheless clearly within the spirit of that act.

To comply with the Court's determination, the Environmental Protection Agency promulgated "nondeterioration" regulations—in January 1975—which statutorily limit the degrees of air quality deterioration caused by industry that will be allowed in clean air States like Kansas. Those regulations established three permissible classifications for air quality, including a "class III" category to allow the States to designate certain specific regions where industry could aggregate and where deterioration up to the public health and welfare standards would be permitted.

However, those EPA regulations have been challenged in Court. As a result, Congress has been asked to clarify its intentions for the nondeterioration permit program during work on clean air act amendments this year.

The Senate Public Works Committee has issued its recommendation and, while representing a good deal of careful study and consideration, it leaves a number of critical questions unanswered. I want to briefly state my feelings about that report, and the direction in which I feel Congress should move on this issue at the present time.

#### FOCUS ON COMMITTEE BILL

I commend the Senate Public Works Committee for giving the individual States a predominant role in administering the proposed nondeterioration permit program. In order to mitigate the extent of Federal interference in local land-use planning, the committee correctly recognized that the primary responsibility for implementation and oversight of this permit program should rest with the States. At the same time, the committee has recommended that the States determine for themselves exactly what constitutes "best available control technology" with respect to industrial applications for local expansion or new development. To this extent, the members of the committee have sought to assure a reasonable level of local and State input into the nondeterioration planning process, and I certainly agree with this frame of thought.

There is another point on which I am in general agreement with the committee, and that is in regard to the need for Congress to express itself more explicitly and affirmatively on the nondeterioration issue. The ambiguous and imprecise language contained within the 1970 act needs to be clarified, and this should rightfully be done through legislative action rather than solely through court rulings or administrative regulations. Neither delay for the sake of delay, nor avoidance of the issue by Congress will serve the best interests of either the general public or of industry. But despite my outlook on this point, I do feel that there are a sufficient number of unanswered questions about the administration of the nondeterioration program and its potential impacts that make further study not only desirable, but absolutely necessary for an intelligent resolution of this issue.

For one thing, I am concerned that the Senate committee's bill does not allow for a "class III" category permitting the States to designate certain regions for concentration of industry while still protecting the public health and welfare. Unlike the EPA regulations now in force, the provisions of this bill allow only for extremely restricted development in "class II" areas which comprise all land in the United States except for international and national park areas designated as "class I." Development in class II areas would be significantly limited by standards permitting only small "increments" of air quality deterioration which bear no relationship at all to the "public health and welfare" standards established by Congress in 1970. The impact of this arbitrary national standard could be substantial not only for industry, but for the general public as well.

#### UNANSWERED QUESTIONS

In spite of the numerous theories set forth about the potential repercussions of the nondeterioration program, and perhaps because of them, Congress simply does not at this time have enough precise information about the program's likely impact on the utilization of our Nation's resources; on the costs of producing goods; or on the availability of capital for industrial expansion, for technological improvement, and for maintenance of existing facilities. We do not know enough about how many jobs will be lost, about the resulting stimulus to higher consumer prices generated by higher industrial costs for compliance with the regulations. We do not know enough about the impact on the ability of this Nation to achieve energy self-sufficiency in the near future, or the incentives which may be established for large companies to locate overseas.

Before this Congress imposes a restrictive nondeterioration permit program on Kansas and the rest of the Nation, I want to know if the application procedures for industry are as economical and expedient as can possibly be expected, and just what the impact of those procedures will be on development planning. I want to know to what extent the nondeterioration provision might be construed as a back-door approach to Federal land-use planning based on the single factor of air quality.

These are all legitimate questions based on material that has recently come to light not only from private sources, but from Federal agencies as well. In separate letters to Senator Moss last spring, both the Federal Energy Administration and the Department of the Interior expressed concern about the provisions embodied in the committee's Clean Air Act amendments. The administrator of the FEA expressed concern that these provisions could result in increased capital costs to the utility sector, resulting in higher consumer costs for essential utilities; and he expressed the belief that nondeterioration provisions "could lead to substantial delays in siting new facilities" for energy development. Similarly, the Secretary of the Interior suggested that the Senate bill "will place substantial constraints on growth and resource use" and advised that "we should press forward with obtaining the basic data required."

Just as alarming to me were the conclusions set forth in a private study conducted by the National Economic Research Associates, Inc.,

on the estimated costs for the electric utility industry likely to result from the nondeterioration provisions in the Senate bill now before us. In its preliminary draft report issued on April 16 of this year, the NERA provided statistical evidence that the cumulative costs of these nondeterioration provisions between 1975 and 1990 would add an approximate \$454 to the average household's normal utility bills during this period. Beyond 1990, the expected annual cost, per household, could be as much as an additional \$90 above normal charges. These costs, stated in 1975 dollars, reflect the economic impact of the non-deterioration program on generating plants built after 1975 and covered by the provisions in this bill. These figures are for the south central area States, including Kansas, and similar estimates for other areas are both higher and lower than those just cited. The NERA report is an informative, albeit speculative preview of certain repercussions of what we have before us today. Just how close the NERA figures are to what could eventually transpire is impossible to determine at this time, but the question of increases in consumer utility costs is just one of several matters requiring further study, in my opinion.

#### TEMPORARY DELAY ADVISABLE

Due to these uncertainties, and gaps in our informational base, I do feel that Congress should have the benefit of additional data on the potential economic and social impacts of a restrictive nationwide, non-deterioration air quality program. The Moss amendments being offered on the floor at this time do, in my opinion, mandate a reasonable and minimal suspension of congressional determination on this issue until further information of this type is collected by the National Commission on Air Quality. It is my understanding that this delay would be in effect for no more than 1 year and would give us a much larger informational base on which to construct a sound air quality preservation program. This temporary suspension of congressional determination will not endanger the integrity of our air or permit undue industrial expansion during the interim, because the EPA regulations promulgated in January 1975 remain in effect at this time.

Under the terms of those regulations, permits for new development and expansion of existing facilities will continue to be reviewed jointly by the States and EPA to assure that no irresponsible pollution of the air occurs while we await further information on the long-range impact of this new program. With all factors given due consideration, I feel that this avenue is the most advisable for Congress to take at this time, and I am prepared today to give my support to passage of the Moss amendments. I am confident that within 1 year's time, this Congress will be in a much better position to act decisively and affirmatively to clarify its intent with respect to a national nondeterioration air quality program that will protect and preserve the integrity of the air we all must breathe.

Mr. PROXMIER. American Motors is the largest single employer in the State of Wisconsin and, like other auto manufacturers, will be very much affected by sections 18, 19, and 20 of the bill dealing with auto emissions standards. Several amendments having to do with these standards have also been offered.

I think we have an obligation not only to protect the environment, but also not to delay indefinitely in reaching a decision on legislation which will have the impact on industry of the bill, S. 3219, now before the Senate. In order to meet its obligations under the law effectively, industry must know what its obligations and the law are going to be.

It has been more than 4 months since S. 3219 was reported to the Senate. I am delighted that we can expect a final vote this week and that House action is also anticipated in the near future. I hope that the conference committee will reach an early agreement so that a joint version can be cleared for the White House as soon as possible.

## SENATE DEBATE ON S. 3219, AUGUST 4, 1976

### CLEAN AIR AMENDMENTS OF 1976

The ACTING PRESIDENT pro tempore. The pending question is on the amendment of the Senator from Alabama (Mr. Allen) No. 2101, to the amendment of the Senator from West Virginia (Mr. Randolph).

#### AMENDMENT NO. 2101

Mr. ALLEN. I send to the desk a modification of amendment No. 2101, and ask that it be stated.

Beginning on line 6, after "investigation", strike the comma, insert a period, and strike the remainder of the amendment that follows thereafter.

Mr. Allen's amendment No. 2101 (as modified) is as follows:

On page 2, line 11, strike the period and insert a semicolon and add the following: "none of which provisions shall be implemented or enforced until a period of one year shall have elapsed from the date on which the Commission submits the report required of it on the results of its study and investigation."

Mr. ALLEN. Originally I submitted two amendments, amendment No. 2092 and amendment No. 2100. I ask unanimous consent that those amendments be printed in the Record.

#### AMENDMENT No. 2092

On page 2, line 11, strike the period and insert a semicolon and add the following: "none of which provisions shall be implemented or enforced until a period of one year shall have elapsed from the date on which the Commission submits the report required of it on the results of its study and investigation."

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#### AMENDMENT No. 2100

At the end of line 11, page 2, add the following sentence: "None of the provisions of subsection (g) of section 110 of the Act in contravention of the recommendations of said Commission as contained in said report shall be enforced or implemented."

Those amendments, then, were merged, under the amendment offered by the Senator from Alabama now speaking and the Senator from Florida (Mr. Stone), to become amendment No. 2101.

Rather than offer amendment No. 2092, since much of the discussion has been on amendment No. 2101, I have merely modified it—and I offer this modification on behalf of myself and the Senator from Florida (Mr. Stone)—by striking out the second aspect, the second division of the amendment. In other words, as it now stands, it is the same as amendment No. 2092.

The status of the parliamentary situation is that the Moss amendment has been defeated. That amendment would have stricken out section 6 of the bill. This is also referred to as subsection (g) of section

110 of the act. They are identical, and are interchangeable terms, as I understand it.

So the Senate has decided that it wishes to leave section 6 in the bill. That is quite obvious, because there was about a 2-to-1 vote, and unquestionably that section will be a part of the bill when it is finally passed on tomorrow.

The first amendment that was offered when this bill was laid before the Senate, the Randolph amendment (No. 1798), which in effect would have allowed the enactment of section 6, and at that time would have set up a commission to study the implementation and the factors surrounding the implementation of section 6. In other words, the law would be enacted and we would have an ongoing study by a commission.

But the theory of the Moss amendment was that we should not enact before study, that the study come first and enactment later.

When the Randolph amendment (No. 1798) was offered, the Moss amendment was not in order as to the Randolph amendment. Since the Moss amendment was not in order as to the Randolph amendment, the Senator from Alabama, with the approval of the Senator from Utah (Mr. Moss), did prepare an amendment (No. 2101) which was a half-way position between the Randolph amendment providing for enactment and a simultaneous study or an ongoing study from the time of the enactment, and the Moss amendment, which would have had the study and then enactment later, at no stated time.

So amendment No. 2101 offered by Mr. Stone and myself in effect provides for the enactment of section 6. There is no doubt about that becoming the law. There is no state of confusion as to when or whether section 6 would be enacted, which is a doubt left by the Moss amendment, but amendment No. 2101 would not leave any doubt about the enactment of section 6. It would go on the statute books under amendment No. 2101. However, the provisions of section 6 would be stayed, held in abeyance for 1 year after the committee made its recommendations. What is the purpose of that? It provides for a reliable study before the going into effect of the provisions of section 6. Why the year? Well, after the committee makes its findings and its recommendations, Congress would have 1 year to make such refinements or such modifications in section 6 as seemed to be indicated by the recommendations of the Commission.

What possible criticism could be offered to that plan? We have got the statute enacted; it is the law of the land, but anticipating that possibly this might not be the best possible remedy or plan for action, as the case might be, why not allow a period of 1 year after the Commission makes its recommendation before the provisions of section 6 would be implemented?

I have heard on the floor here time and time again—and it is a part of the legislative history—that EPA already has the power that is given to it under section 6. In fact, it has been asserted time and time again that section 6 is less restrictive than present EPA powers and regulations.

That being true—and I have no recourse but to accept it, and I am glad it is a part of the legislative history—I state here as a part of the legislative history that the proponents of the bill have stated on the floor, as the Record will show, that the purpose of section 6 and

the function of section 6 has been to provide less restrictive regulation, to give relief rather than harassment. And it has been pointed out that some of the powers the EPA now has would be transferred over to the States in the implementation of the regulations provided for under section 6. So if we have in the present law for EPA more power already on the statute books than it would have under the Clean Air Act amendments, why not wait the year? We are not depriving EPA of anything during that interim period of 1 year. They have the power, so say the sponsors of the bill.

Why not wait until the Commission makes its report? We are not saying under amendment No. 2101 that section 6 shall not be enacted. The effect of this amendment is, yes, enact section 6. They say it is less restrictive than present law. Fine. The Commission might say that section 6 ought to be strengthened.

But before we implement a section that takes power from EPA and makes their regulations less restrictive, let us have the study. The study might show that some of the provisions are unwise. I have pointed out the mandate that the Commission has under the Randolph amendment, and I do not wish to interfere in any way with this mandate, because I think the mandate is excellent. No one objects to the Commission. Everyone is for the Commission. I assume everyone is for this mandate because the mandate indicates that we have practically no knowledge whatsoever about what we are legislating about. That is what the mandate indicates.

Look on page 2, subsection (2) starting with section (A) on through (F)—(A), (B), (C), (D), (E), and (F). That is the Commission's mandate. And it indicates that we are legislating not from strength, knowledge, or wisdom, but we are enacting section 6 from a status of lack of knowledge and complete ignorance on the subject.

Is that an incorrect statement?

But will the Commission be mandated to check into something that we already know about? Will the Commission be mandated to check into established facts? Well, hardly. They will not wish to go through a needless exercise. So, we assume, therefore, that the areas in which the Commission is mandated under the Randolph amendment to study represent areas about which we do not have sufficient facts, knowledge, or expertise. These are the very areas covered by section 6.

Let us see what the Commission is called on to study. Among other things, it is to study under (A)—

... whether the provisions relating to the designation of, and protection of air quality in class I regions under this Act are appropriate to protect the air quality over lands of special national significance, including recommendations for, and methods to add to or delete lands from such designation, and to provide appropriate protection of the air quality over such lands; . . .

So apparently we do not know whether the designation and protection of air quality in class I regions under the act are appropriate to protect the air quality over lands of special national significance. We do not know or this Commission will not be charged with the duty of finding out whether the provisions of section 6 are appropriate or not. We do not know that. So we ask the Commission to study it. In the meantime, we enact section 6, while we are having an ongoing study after the enactment of section 6 of whether section 6 is appropriate or not.

Next, we call on the Commission to check and study—

... whether the provisions of subsection (g) of section 110 of this Act—that is section 6—including the 3-hour and 24-hour increments, affect the location and size of major emitting facilities, and whether such effects are in conflict or consonance with other national policies regarding the development of such facilities; ...

So we do not know that, and that is covered in section 6. We know nothing about it, and we are charging the Commission with the duty of finding out about it by making the study. But in the meantime, we pass the law.

I think this is the most significant area of the study and show a complete lack of knowledge on the part of those charged with implementing this act.

Let us listen to this. The Commission, after section 6 is enacted, is charged with the duty of studying—

... whether the technology is available to control emissions from the major emitting facilities which are subject to regulation under subsection (g) of section 110 of this Act—and I say parenthetically that is the same as saying section 6—including an analysis of the costs associated with that technology; ...

So, apparently, we are legislating here—those who are ramming section 6 down the throats of those to be regulated—when they do not even know whether the technology is available to control emissions from the major emitting facilities which are subject to regulation under subsection 6. We pass a law governing emissions from plants, and they do not even know, and they call on the Commission to find out, whether the technology is available even. This technology may be 10 years down the road. But here they are enacting section 6, and it is a foregone conclusion they are going to do it because they voted 2 to 1 yesterday, in effect, to enact it by killing the Moss amendment which would have stricken it out.

The Senate is enacting in this area, and it does not even know whether the technology is available to comply with this legislation. How anxious can we get? How precipitous can we get? Without even knowing whether the technology is available to comply with section 6, the Senate goes ahead and enacts section 6. That does not make very good sense, it seems to the Senator from Alabama. That is done without even knowing the facts to enact a law under which regulations could be imposed, and we do not even know whether the technology is available to comply with those restrictions.

Why not follow the route proposed by amendment No. 2101, as modified by the distinguished Senator from Florida (Mr. Stone) and myself. It provides, because that is inevitable, for the enactment of section 6. That seems to be the will of the Senate. I am accepting that as an accomplished fact. We are going to enact section 6. I do not favor it, but the Senate has indicated, without doubt, that it will not knock it out.

Let us legislate, then, having in mind that section 6 will be enacted and that a commission will be set up to study the implementation of section 6. But we know very little about the area in which we are legislating, as indicated by the areas that the commission is to investigate. I read only three of the areas. Section (d) is to study whether the exclusion of nonmajor emitting sources from the regulatory framework under this act will affect the protection of air quality in class I and class II regions designated under this act. In other words, it is to check

to see whether section 6 is acting properly in excluding nonmajor emitting sources from the regulatory framework. They do not know whether that should be done, and it asks the commission to find out.

So if there is any doubt—as seemed to be indicated when the Moss amendment was turned down—if there is any doubt about section 6 becoming the law, that doubt is removed under the Randolph amendment. It also is removed under amendment No. 2101, because the Randolph amendment—hopefully, as amended by the Stone and Allen amendment—would presuppose and assume the enactment of section 6. But it would stay the enforcement or implementation of section 6 until after the commission had made its study and made its report as directed under the bill.

Then a period of 1 year should elapse, so that corrective or implementing legislation to section 6 could be enacted.

Let us see what the difference is between the pending amendment and the Moss amendment. The Moss amendment would provide for a study, and section 6 would be eliminated from the bill. Then, if the study indicated that provisions in line with section 6—should be enacted, we still would have the legislative hurdle of getting Congress to enact a section 6 or provisions similar to section 6.

The argument could be made, I am sure, that under that amendment, one could not be absolutely sure that section 6 would ever come back. Those in the Senate who want it, even though it is not based on the study—it is not based on the knowledge of the facts as indicated by the Randolph amendment—those in the Senate who want to legislate without a study, will get what they want, under the pending amendment. They would get section 6 enacted into law. There would be no doubt about it. It comes into full bloom, unless modified by Congress, 1 year after the commission makes its report.

So, with EPA having more power right now than it will have after section 6 is enacted—and my authority for that is the sponsors of the bill—what is there to lose in the cause of cleaning up the air? They have more power now than they will have after section 6 is enacted, we are assured by the sponsors of the bill, so what is there to lose? Continue with that added power until the commission makes its report and a period of 1 year has elapsed thereafter, at which time section 6 will come into full force and effect. It does not take another law of Congress. It is just a moratorium of 1 year on its implementation, after the report is filed.

So, in effect, if the sponsors of the bill can be believed as to the accuracy of their statement that section 6 is less restrictive than EPA's present power, why not leave EPA unmolested with this added power for another year, before section 6 comes into full force and effect? I say 1 year. Not a year from now, but a year from the filing of the report by the commission.

So, the pending amendment recognizes and acquiesces in the enactment of section 6.

But since, essentially, we know so little about this area, let us wait a year after the commission makes its report before we implement section 6, give Congress an opportunity to follow the recommendations of the commission. We might find that more restrictive measures are needed. We might find that section 6 is not restrictive enough. We might find it is too restrictive. But in the light of that information, as adduced by the commission set up under the Randolph amendment—this does not change the Randolph amendment one jot or one

title; it leaves it in full force and effect. It is a question of whether we study before we enact or whether we study after we enact. That is the only thing there.

I want to assure the Senator from West Virginia that my amendment does not affect at all the provisions of his amendment.

It just provides that section 6 shall not go into full force and effect until 1 year after the commission set up under the Randolph amendment makes its report.

Mr. RANDOLPH. This would not perhaps be a significant point in reference to the purposes of the amendment that I have offered, but the commission would be appointed within 90 days after the enactment of the law. The commission has a 3-year study limitation for reporting; however, the special study of the so-called Randolph amendment would not run for the 3-year period, but rather for 2 years. I simply want to indicate that my amendment zeroes in on this important issue.

Mr. ALLEN. I believe it says not more than 2 years, which could mean as little as 2 or 3 months.

Mr. RANDOLPH. Yes; that is a maximum.

I was only saying that this study is to have the primary focus of the commission for the initial 2 years.

We should remember that in my study amendment we are attempting to act expeditiously in reference to that study and the findings therefrom.

Mr. ALLEN. Yes, and the only objection I have, the Senator understands, is that he is investigating the propriety of section 6 after it has already been enacted, after the horse has gotten out of the stable, so to speak. So the Allen amendment would leave the Randolph commission, as it should be called—in full being to perform its duties entirely as provided under the Randolph amendment. It just delays the effective date of section 6 until the lapse of 1 year following the making of the report by the commission.

Mr. RANDOLPH. I am not being facetious, but I think that, actually, the horse is going in and out of the stable, rather than being on the inside of the stable or the outside of the stable. As Senator Muskie and others on our committee know, there is constant change. This is the process which we all understand in reference to clean air. I only say this because we are not attempting to lock in anything by adopting the section of the committee bill. Rather, we are establishing a process which will be subject to later modification.

Mr. MUSKIE. The Senator has been posing many questions to the proponents of the bill. The Senator was not persuaded by my argument yesterday that the provisions of this bill on nondegradation are less restrictive than EPA's regulations on those who seek some relaxation of standards. I made the point that the effect of the Moss amendment was to eliminate the committee provisions and leave in place EPA's regulations, which, in my judgment, were stronger.

The Senator from Alabama was not persuaded by that argument yesterday. His reaction comes 24 hours later. He says he is now persuaded of that fact; therefore, he proposes an amendment that would suspend not only the committee provisions, but the EPA regulations.

Mr. ALLEN. I beg to differ with the Senator.

Mr. MUSKIE. The Senator is choosing to use his rhetoric to prove his case and this is as I perceive it.

The effect of his amendment today is stronger than the effect of the Moss amendment for the next year, because it suspends everything.

Mr. ALLEN. That is not correct.

Mr. MUSKIE. It suspends EPA's regulations because the effect of the language of the Senator's amendment is to accept the committee amendment, to make it law, but to suspend its operation for a year. To make the committee's provisions law under the terms of the committee's bill is to replace EPA's regulations. That is what the committee's bill does. The nondegradation provisions of the committee bill replace EPA's regulation and the Senator says that the purpose of his amendment is to enact the provisions of the committee bill into law, but suspend them for a year—

Mr. ALLEN. Leaving EPA's present regulations.

Mr. MUSKIE. Well, it does not. It does not. I read the language of the Senator's amendment and his description of it: "None of which provisions"—that is, the provisions of the committee bill—"shall be implemented or enforced until a period of 1 year shall have elapsed from the date on which the Commission submits the report required of it on the results of its study and investigation." That amends the provision of the bill which makes the nondegradation policy of the bill law. If section 6 becomes law, EPA's regulations are wiped out. There is nothing in the Senator's amendment which preserves the EPA regulations—nothing whatsoever—and there is nothing in the committee bill that preserves EPA's regulations once the committee bill becomes law.

Mr. ALLEN. Will the Senator then support the amendment if it is amended to provide, as the amendment intends, that the present EPA regulations, as I have stated on the floor, continue their power as far as the legislative history goes? Will he support the amendment?

Mr. MUSKIE. No; I shall not, for other reasons I shall state.

Mr. ALLEN. I see.

Mr. MUSKIE. The Senator continually asks a study and offers as justification as a way of assuring the study these amendments which, upon examination, he himself changes.

I ask for the staff to bring on the floor evidence of the studies that have been taken on this study.

Yesterday, the Senator from Alabama and I were engaged in some discussion as to which was stronger, EPA's regulations or the committee bill. I would be the first to concede that judgments can differ on the answer to such a question. Rather than leave it to a matter of judgment, I ask to have printed in the Record a memorandum which analyzes that difference and gives Members of the Senate some basis for making the judgment for themselves.

COMMITTEE ON PUBLIC WORKS,  
Washington, D.C., August 2, 1976.

#### MEMORANDUM

To: Senator Edmund S. Muskie.

From: Leon Billings.

Subject: EPA regulations in the committee bill.

1. EPA's regulations constitute a national land use classification plan. The Committee bill establishes a policy to protect areas of the country with currently clean air from significant deterioration by limiting the amount of change in air quality which can result from new major emitting facilities without a future congressional review of this policy.

2. EPA's system vests with the Administrator of EPA the authority to review and veto any location of any major emitting facility in a state on the basis of

the administrative judgment by EPA that increments will be exceeded. Under the Committee bill the Administration would have to carry this burden in a court.

3. EPA's system applies to all areas of the United States unless at a particular site the ambient standards for particulate on  $\text{SO}_2$  are being exceeded. The Committee bill only applies to areas outside the portions of air quality control regions which exceed standards. The state decides which portions of those regions should be subject to the nondegradation procedures.

4. Under the EPA regulations the manager of any Federal lands anywhere in the United States could unilaterally decide at any time that those lands regardless of size should be subject to pristine protection and stop projects where site preparation had begun. Under the Committee bill such regions would be known on enactment or could only occur with a joint determination of State and Federal governments.

5. Under the EPA regulations no development could occur near so called Class I regions if the Class I numbers would be exceeded. Under the Committee bill such development could go ahead after the owner showed that construction would not interfere with air quality values.

6. Until the litigation regarding the basis for the current regulations is resolved every facility in the United States will be constructed under a cloud—not just those which emit  $\text{SO}_2$  and particulates—but those which emit the four other pollutants which the environmental suit alleges should be subject to significant deterioration provisions. This includes automobile traffic and other sources that emit auto related pollutants.

7. In the absence of congressional action the court could define an entirely different approach to the Clean Air Act requirement to "protect and enhance" air quality. And the legislative history of the Clean Air Act clearly supports a requirement to prevent significant deterioration.

8. Under EPA regulations all plants will be built under a cloud until a state adopts a nondegradation procedure unless the plant applies for and receives a Federal permit and demonstrates that no Class II increments will be exceeded. The Administrator may unilaterally require the source to also show that Class I increments will not be exceeded because of proximity of Federal land.

9. Under EPA regulations there are three classes of clean air regions on top of two classes of dirty air areas—thus creating a complex land use classification system. Under the Committee bill there are two classes: non attainment areas where standards are being exceeded; and clean air regions. And there is a procedure to protect the air quality values of national parks and wilderness areas.

10. In sum: The difference between the two bills can be summed up this way: uncertainty versus finality; simplicity versus complexity; State versus Federal control. The Moss amendment will leave uncertainty, complexity and Federal control. The Scott amendments would lead to uniform dirty air.

Mr. MUSKIE, I think the words "stronger" or "weaker" are not sufficiently precise to really describe the differences between the two.

Now, there is in front of me, a cart which contains a part of the committee files on the subject of nondegradation, automobile controls, and transportation controls. About half of this material is on the question of nondegradation and it includes several of the studies on this subject that EPA has made over a period of 4 years.

At some point, the process of study has to be resolved by some decisions on policy.

The EPA studies were in connection with its rulemaking powers. So it was a structured study conducted all over the country, in hearings all over the country, in which proponents of nondegradation policy and opponents had equal access to the hearing process.

Those hearings were on the public record, transcripts were kept, all of that study is available and, as a matter of fact, it was in part because the study period took so long, that suit was brought to mandate EPA to institute some nondegradation regulation because the law required it. The court finally mandated it, and it was on the basis of these hearings that EPA's regulations were finally developed.

They, of course, were immediately taken into court by industry, and by environmentalists who wanted stronger regulations.

It was at that point that the Committee on Public Works entered the picture with hearings of its own, extensive hearings.

Our work has taken a process of almost 2 years and the markup sessions which began a year ago June, and continued for 9 months, resulted in at least seven committee prints on nondegradation, committee prints which were produced and circulated so that they might stimulate comment from opponents, from whatever source.

We published one committee print before the congressional recess of last year in July, knowing that we were going out for a month, and in that month we solicited reactions from those who had any questions at all about that committee print. It was that committee print that reflected EPA's regulations, more than any other print, and that is when we got the buffer zone maps which produced that map which was on the floor yesterday which was a complete distortion of the provisions of the committee bill.

That is the kind of process through which we have gone. The Senator from Alabama says, "Well, let us have still another study of a year."

I mean, it is a dilatory request. I do not charge the Senator from Alabama with that motivation, but I have dealt too long with those who welcome that kind of an amendment of the committee bill to describe it as anything else. They have dragged their feet, they have delayed this process, they have resisted the Clean Air Act, they have resisted nondegradation, and they have resisted every form of regulation. Now they have made their true purpose clear. They do not want any regulation in the clean air areas of the country and they intend to prevent it if they can because they say, national primary and secondary standards are good enough.

Well, this amendment although it is somewhat different in form from that which the Senate rejected so overwhelmingly yesterday, is in the same direction, and I oppose it for that reason.

Nondegradation policy was first articulated in Federal Water Pollution Control law in 1967 and incorporated in the 1967 Air Quality Act, which stated that a basic purpose of the act was to "protect and enhance the quality of the Nation's air resources." That policy was not altered in the 1970 amendments. Requirements to implement this policy were deleted from EPA's guidelines in 1971. The courts subsequently required EPA to promulgate such requirements, and EPA complied by issuing regulations on December 5, 1974. During hearings in 1973, 1974, and 1975, the committee was urged to resolve this issue through legislation.

As early as July 1973, Carl Bagge, representing the National Coal Association said:

This is far too significant an issue to be determined by the judiciary. Its economic and social implications are so broad that it cannot and should not be determined by an independent regulatory agency in a rulemaking proceeding as has been proposed. This is an issue which can only be resolved . . . by the Congress of the United States.

Mr. Bagge went on to say that ". . . the next move is clearly up to Congress."

The administration also asked Congress to address this issue when it submitted Clean Air Act Amendments in 1974.

Numerous studies have been conducted on the implications of various nondegradation policies. The committee considered these and fashioned a proposal which encourages the economic growth needed for this Nation while providing environmental protection of air resources needed by the Nation. Only the most valuable Federal assets—national parks and national wilderness areas—have been given a special protected status—called class I.

The concept used to protect clean air while allowing adequate growth is a concept of air quality increments. The increments are amounts of new pollution which may be added by new facilities to existing air quality—they provide a uniform national measure of change in air quality which can be allowed in clean air areas, thus eliminating inequities among States while providing some degree of control over the pace of utilization of limited air resources.

The committee received numerous studies of the nondegradation policies. Those studies were an important element in the committee's decision to make substantial alterations in the subcommittee bill. Those changes include:

First. Reduction of the number of areas given pristine air quality protection—class I—from 360 to 131;

Second. Expansion of the State role in all aspects of nondeterioration policy and implementation with concurrent restriction of the Federal Government's role;

Third. Provision of flexibility in determining whether or not proximity to a class I area would affect construction of a new facility, thus eliminating arbitrary buffer zones.

Much of the criticism of the nondegradation do not take into account these and other significant changes which the full committee made in the bill.

#### IMPLICATION OF REJECTING THE COMMITTEE PROPOSAL

One of the amendments proposed to the reported bill would strike the committee proposal. Another amendment would add a study of the implications of the amendment. I have no objection to this study. It is a logical mandate to the National Commission on Air Quality.

But the companion amendment to strike the committee proposal is both unwise and ill-conceived. Not only would a reasonable resolution to the non-degradation controversy be discarded but, more importantly, the existing policy and regulation would be left in place. EPA's current regulations are simply not an adequate response to this problem.

The key question is this: What policy will the nation have for the next 2 years—a bureaucratic-judicial policy or a congressional policy?

If a motion to strike the committee's proposal and substitute another study—3 years of studies and thousands of pages of testimony have already been accumulated—the result will be a policy developed and implemented at the Federal level and in the courts with no congressional guidance and no meaningful State participation.

The result will be:

Continuation of the requirement that new facilities in clean air regions obtain Federal permits;

Continuation of the authority of Federal land managers to unilaterally designate any Federal lands as class I without concurrence by States;

Continuation of 60- to 100-mile buffer zones around any such class I areas;

Continuation of Federal authority to reject any State efforts to gain control of this program; and

Continuation of uncertainty caused by lack of congressional policy on this issue.

On the other hand, if the Committee proposal is adopted, the result would be:

State rather than Federal permits for new major facilities and State authority to issue or deny permits for facilities even when such facilities are located on Federal land;

No designation except by statute or any areas as class I without the concurrence of the State;

Elimination of Federal authority to second-guess State efforts to control this program except through judicial proceedings with a Federal burden of proof;

Resolution of the uncertainty of this policy issue by giving clear guidance to all parties, including the courts, as to the basis of nondegradation policy; and

A chance to test policy in actual implementation rather than continuation of hypothetical studies on paper.

#### THE NEED FOR AIR CLEANER THAN THE NATIONAL STANDARDS

In addition to resolving current confusion, the nondegradation provision provides needed protection which the ambient air quality standards do not provide. If the national secondary ambient air quality standards were revised to protect against these damages, achievement of the secondary standards in dirty air areas would be extremely difficult.

If the secondary standards were the only restraint, visibility which is now 100 miles or more in some areas could deteriorate to 12 miles. If humidity is high, visibility would be reduced even more.

Pollutants increasingly are returning to the ground in the form of acid rain which damages valuable water and soil resources. A conference was held in the summer of 1975 in Columbus, Ohio, where numerous scientists expressed substantial concern over this impact.

Norway has experienced a substantial decline in its fishery resources which have been attributed to acid rain. A 20-year study in Scandinavia indicates that acid rain has killed fish and cost the ecology of the area to change. Forest growth and yield have declined. Fish population have been adversely affected by acid rain in 75 percent of the high elevation lakes of the Adirondack Mountains.

Pollution at less than the concentration allowed by the national standards has been shown to damage vegetation. Acute injury to spruce trees have been reported when average concentrations of sulfur dioxide were only two-thirds the level allowed by the ambient secondary standards.

Studies indicate that other important crops are also damaged at concentrations cleaner than the secondary standards, including wheat, potatoes, spinach, apples, and white pine.

Exposure to low level concentrations of pollutants have health effects. Studies done in Japan since the establishment of the primary standards in the United States indicate that air pollution concentrations lower than the national standards cause increase in reported illnesses. The National Cancer Institute estimates that 60 to 90 percent of cancer is environmentally caused. The secondary standards as presently established make no consideration of this fact.

An increasing number of studies indicate that pollutants are transported for much greater distances than previously thought. This means that emissions from rural areas contribute to urban pollution problems and vice versa. In its report to the Senate Public Works Committee of March 1975, the National Academy of Sciences expressed concern that emissions 300 miles upwind could still contribute to problems in major cities.

Last year, I asked many scientists for comments on the adequacy of existing air standards. The Administrator of the Environmental Protection Agency, Russell Train, provided useful documentation of the limitations of existing standards in his letter of October 10, 1975:

For particulate matter, an annual mean concentration of  $60 \mu\text{g}/\text{m}^3$  and a mean 24 hour concentration of  $150 \mu\text{g}/\text{m}^3$  have been set as the secondary standard. Suspended particulates are known to have effects on vegetation, visibility, and manmade materials. At concentrations of  $150 \mu\text{g}/\text{m}^3$ , visibility may be reduced to as low as five miles.

Plant species vary in their sensitivity to ozone and other oxidants. Toxicity also varies with the composition of the oxidants. Injury has occurred experimentally in the most sensitive species after exposure to  $60 \mu\text{g}/\text{m}^3$  of ozone for 8 hours. Crop losses could occur as the result of planting genetically uniform, susceptible varieties. Therefore, the current standard,  $160 \mu\text{g}/\text{m}^3$  for one hour, may not protect all vegetation. Little is known regarding the tolerance of plants under field conditions. The presence of other pollutants and changes in environmental conditions may affect the tolerance of plants for photochemical oxidants.

Photochemical oxidants' effects on manmade materials center on the effects of ozone on elastomers and textile dyes. Many elastomers, including natural rubber, are chemically prone to oxidation and therefore, to ozone attack. Cracking of rubber has been noted at  $40 \mu\text{g}/\text{m}^3$ . Background levels of naturally occurring ozone range up to  $100 \mu\text{g}/\text{m}^3$ .

The primary and secondary standards for nitrogen dioxide are identical being an annual concentration not exceeding  $100 \mu\text{g}/\text{m}^3$ .

The current standard appears protective of welfare against damage from direct exposure to atmospheric  $\text{NO}_2$ .  $\text{NO}_2$  may also cause indirect damage to the extent that it contributes to the formation of the nitric acid in acid precipitation. Nitric acid constituted 24% of the acid in precipitation during 1972-1973 in the Eastern U.S.

Conclusive data are lacking on synergistic effects of sulfur oxides and other pollutants, but preliminary results of work being conducted at EPA's Corvallis Environmental Research Laboratory indicate that a sound basis for standards based on long term growth and processes effects caused by low concentration mixes of sulfur oxides and ozone may be developed in the future.

The phenomenon of acid rainfall is of concern to this agency. A growing body of evidence suggests that acid rain may be responsible for substantial adverse effects on the public welfare. Such effects may include acidification of lakes, rivers, and groundwaters, with resultant damage to fish and other components of aquatic ecosystems, acidification and demineralization of soils, reduction of forest productivity, and damage to crops. These effects may be subject to cumulative build-up as a result of years of exposure to acidic precipitation, but some may also result from "peak" acidity episodes.

#### INCREMENTS AS THE NATIONAL MEASURE OF CLEAN AIR MEASURE

The Environmental Protection Agency examined numerous methods to define "significant" deterioration. The examination encompassed

methods which would have allowed no change in air quality to methods which would result in deterioration beyond current ambient air quality standards.

The approach selected is referred to as air quality "increments"—a concept which sets forth a precise measure of the change in air quality which any single new facility or combination of new facilities could contribute to the atmosphere in a clean air region.

EPA selected three levels of change or "increments". The first, applicable to areas in which preservation of pristine air quality was determined appropriate are related to limits on the capability of air quality monitoring and modeling. The third would permit pollution up to the levels in dirty air regions.

The second level—class II—were intended to reflect a balance between air quality protection and reasonable economic growth. To establish these numbers, EPA examined the plants being constructed in the industrial categories most likely to have pollution problems and then projected the probable air quality impact of construction of such sources. The Agency concluded in its documents accompanying its regulations in 1974 that—

Typical coal gasification plants, oil shale processing facilities, and petroleum refineries would not be expected individually to exceed the Class II increments in most areas.

The same statement holds true for the average sized plants in the following categories: Fossil fuel-fired steam electric power units, municipal incinerators, kraft pulp mills, iron and steel mills, coal cleaning plants, sulfur recovery plants, lime plants, Portland Cement plants, phosphate rock processing plants, petroleum refineries, byproduct coke oven batteries, sulfuric acid plants, carbon black plants, primary aluminum plants, primary zinc smelters, primary copper smelters, fuel conversion plants, and primary lead smelters. For many of these sources, the average-sized plant would be substantially lower than the increment allowed.

Studies since that time indicate that the increments allow even more room for facilities than the first EPA studies indicated. Initially, EPA thought that with regard to a 1,000-megawatt plant—much larger than the average plant now in existence—"in a class II area, a similar source could not be located within 25 miles of the first plant."

Analysis in January 1976 showed that the separation distance had shrunk to 14 miles for high sulfur coal and even less for low sulfur coal—in some cases down to only 1 mile.

Ongoing studies of the Agency indicate that if good pollution control technology is used, "The Senate class II increments will not prevent construction of major, economically sized industrial facilities." In fact, these studies indicate that with such controls, "more than one plant can be constructed at the same site for pulp and paper mills, oil shale plants, refineries and gasification plants."

These same studies indicate that the cost to the electric utility industry will be a 3-percent increase in capital expenditures. The Senate proposal is not expected to have a significant economic impact on other major industrial facilities.

This confirms my earlier statement that each time new studies are completed, they show that more room exists within the class II increments at less cost than previously estimated.

## THE NEED FOR CONGRESSIONAL POLICY

The basic policy issues facing the Congress are not ones that will be eased by further study. They are questions that can and should be answered now:

We can and must clarify the role of States;

We can and must define an appropriate relationship between Federal and State Governments relative to these new major facilities;

We can establish now the land areas we value the most and want to protect. We have the knowledge to establish a test to protect those values so long as we maintain a degree of flexibility.

Further study is an important part of the review of any policy as it is implemented. Such study should be, and will be, a companion to the adoption of this legislation. The preferable route will be for Congress to establish the policy, provide the tests contained in the committee bill, and provide the flexibility of State case-by-case judgment in applying the more stringent of these tests. The alternative is to continue a policy that relies heavily on a Federal presence; a clouded policy and a bewildering judicial debate to resolve the issue.

Now, the mechanism of this bill is the increment approach. It was developed by EPA, and we adopted it after considering other approaches. I ask that a memorandum on the subject of increments be printed in the Record.

COMMITTEE ON PUBLIC WORKS,  
Washington, D.C., December 22, 1975.

## MEMORANDUM

Subject: Nondegradation—The concept of increments.

## INTRODUCTION

This memo attempts to present the arguments in support of the use of increments; these have not been summarized elsewhere, and it was thought that some discussion would be useful. Arguments against increments are summarized concisely in the industry arguments contained in this briefing book.

Increments as a concept exist independent of any nondegradation provision. Without a nondegradation policy as proposed by EPA or the Subcommittee bill, increments would be the gap between present air quality in an area and the secondary standards. That gap amounts to a pollution quota for any new sources moving into the area for expansion of existing sources. Without a specific non-deterioration policy, states are required to examine new sources to determine their impact on primary and secondary standards to assure that they do not use up the available air resources. Increments are a measure of anticipated change in air quality. The argument is *not* whether increments will or won't be used but what the increments will be.

EPA regulations propose the use of three different increments for two pollutants. The smallest increment would be for the highly protected areas (such as national parks). The Subcommittee proposal adopted the first two increments proposed under the EPA scheme. The third category assumedly are those areas in which air quality is already degraded. The areas where development is expected to occur in any substantial degree are to be classified as Class II areas. The increments or pollution quotas for such areas range from  $\frac{1}{4}$  to  $\frac{1}{2}$  of the numerical levels established by the secondary standards.

This does not mean that air in such areas will be kept twice as clean as the secondary standard would allow, since the quota, or increment, is to be added to existing air quality. If that existing air quality is already  $\frac{1}{2}$  the secondary standard, and the increment allowed under nondeterioration provision is added to that level, then the air quality would be at a level close to the level allowable under the secondary standards.

Industry has argued that secondary standards should govern and all increments be dropped while further study is done. Environmental groups have argued

that increments should be established for three more pollutants (nitrogen oxide, carbon monoxide, and hydrocarbons) in addition to two covered by EPA's increments (sulfur oxides and particulates).

#### OVERALL APPROACH

Increments provide a very useful management tool for allowing the public and governmental units to plan their economic development and the use of their air resources. Without increments these decisions will be made on an ad hoc basis by the industry as they implement development priorities.

The approach provides a basis against which increased pollution from development projects can be measured prior to such emissions actually exceeding secondary standards. Once such standards are exceeded, the planning options of the public become severely restricted.

1. Regional Equity is improved under an approach using increments. In the absence of increments, areas with extremely clean air and flat terrain have a great advantage over areas with moderate levels of pollution or hilly terrain. In the later two cases, the distance between air quality and the secondary standards may already be a rather modest "increment".

If increments are used, most of the country has an equal amount of air resource to use in its development activities.

Without increments, strong incentives will exist for industry to move to flat terrain and clean air zones where modest pollution control will avoid secondary standard problems for the first sources in the area.

2. Stimulates Better Technology. In the final argument, pollution control is improved only as technology improves and proper planning occurs. Increments provide a strong incentive for new large facilities (with adequate resources and high demand for their products) to improve pollution control technology in order to locate such facilities in clean air regions without exceeding the increments allowed. This is particularly true for a number of large energy-related facilities.

If such new plants are allowed to develop in clean air regions with minimal pollution control, there may be inadequate incentive to create better technology. Even the requirement of best available technology is inadequate in cases where the "best" is not very good.

New large sources are the most likely place for substantial efforts in pollution control to occur—they have a large financial base which can absorb pollution control cost efforts. And such facilities are usually the most cost-effective in the industry.

Since many industries want to "cluster", or to establish very large facilities, the increments provide an incentive long before the secondary standards would provide a similar incentive. Given the expected growth of emissions from all sources in the country (a doubling of sulfur oxides emissions is expected in the next 20 years), mechanisms to encourage improved technology will be needed.

3. Minimizes State Competition. Many States feel that high quality air is a valuable resource for their economic development and for the aesthetic enjoyment of their citizens. Such States will always be under substantial pressure to sacrifice this air quality if industry suggests that a neighboring State, with less stringent pollutant standards, would be a more attractive industrial location. While increments do not totally eliminate such competition, they substantially reduce the possibility of significant differences and the inevitable pressures that are attracted to such differences.

4. The Increments are Based on an Extensive Record. The approach identified in the present scheme of increments is the result of one of the longest rule-making processes in the 5-year history of the Environmental Protection Agency. After the court order was issued requiring such regulations, the Agency proposed four basic choices for public discussion. EPA held numerous regional hearings on these choices, selected increments as the best of these, proposed regulations based on comments received, received further comments, revised the regulations, and promulgated them December 5, 1974.

The plan is superior to any other scheme devised for preventing significant deterioration in clean air areas. The increments were established as a proper balance between the economic development likely to occur and the prevention of significant deterioration of air quality.

5. The Use of Secondary Standards Alone. Such an approach would allow clean air areas to get many times worse before planning and control would occur. By the time this realization occurs, it may be too late. As an area begins to ap-

proach the secondary standard, it usually does so because of the momentum of development that is occurring. This momentum will probably carry the area beyond the secondary standards.

The increments provide an early warning system to avoid or reduce this problem.

6. Major Facilities Attract Satellite Growth. Major facilities will be reviewed under the increment approach, but the review of small satellite growth is not required by the provision. The difference between the increment and the secondary standard may well prove to be a "cushion" which can absorb the general area satellite growth without exceeding the secondary standard.

This is less than complete air quality protection, but much better than no control at all until the secondary standard is exceeded. If major facilities are allowed to pollute up to the secondary standard, no such cushion will exist.

7. Modelling is presently done for major new facilities under present State plans to determine whether or not the secondary standards will be exceeded. At present there is no safety margin associated with such modelling. Yet modelling is often in error by a factor of two to three. Modelling therefore is not created by the use of increments, but merely provides an opportunity to apply a safety margin to such modelling. In the event the modelling proves inaccurate, and the increments are exceeded, they will have provided a safety margin which protects the existing secondary and primary standards.

8. The Increments Allow Substantial Development. In many respects the planning aspects of the increment approach preserve the ability to develop. The Class II increments were designed to allow well-controlled sources of the average size now planned for major industrial sources (these averages are much larger than most existing plants). Such planning preserves options and supplements the requirement for best available control technology. Uncontrolled growth and minimal pollution control severely restrict the options of the second, third and fourth facility to choose to develop in an area.

#### CLASS I INCREMENTS

Class I areas are to be highly protected under the Subcommittee provision. The provision mandates that all international parks, and each national park, wilderness area, and wildlife refuge area over 1000 acres be protected as a Class I area. States and Federal Land Managers may designate additional areas.

1. Class I Intrusion Analysis is Defensible. Sources located outside a Class I area may still have substantial effect upon the air quality over the Class I land. In fact, the maximum impact of a large source is usually a number of miles downwind from the stack. Without this intrusion analysis, a game of pretense would be required—one of pretending that air quality was not worsened when in fact actual air quality readings could deteriorate substantially.

Any proposals to establish an arbitrary buffer zone beyond which no intrusion analysis would be calculated to suffer from this difficulty. It would be possible for a large number of sources to feed into the air mass over the Class I area and have a substantial negative impact.

Intrusion analysis actually allows a well-controlled source to benefit from tight control and move closer to a Class I if the source desires to do so and would not exceed the increments.

2. No Adverse Impact. A different approach to a Class I increment would be to require that no facility built within a Class I area be allowed to have any measurable impact on the air quality over that Class I area. Such an impact is impossible to measure and therefore impossible to implement. Monitoring devices are not sensitive to levels below the Class I increments presently established.

If this requirement were coupled with intrusion analysis, it would also make extremely large buffer zones. This could inhibit the designation of additional Class I areas. Pollutants tend to dissipate more rapidly in the first few miles of dispersion; the last amounts of pollution can travel extremely long distances. Mathematical modelling could probably project such an impact, even though actual monitors might not be able to make the measurements required. This would mean the modelling analysis would probably create very large buffer zones.

3. Criteria for Establishing Initial Class I Designations. There are numerous categories of Federal lands which are held as national resources and are of value to all the Nation's citizens, not just the State within which these lands fall.

There are basically two ways to protect this Federal interest: (1) Establish in statute some mandatory Class I areas which cannot be reversed by either the Federal Land Manager or the State, but only by subsequent action of Congress (2) designate some areas Class I initially, and require approval by both the State and the Federal Land Manager to reverse this. Presumably the Federal Land Manager would protect the Federal interest.

It is hard to object to the argument that the Grand Canyon should never be allowed to be reclassified by either a State or Federal Land Manager. One system for determining the categories of land that fall within an initial Class I designation (or mandatory designation) is to examine the kind of experience these lands are to provide for citizens who use such areas. Parks come clearly to mind: so do wilderness areas because of the kind of experience present visitors expect to receive and to preserve resources for future generations. National monuments and recreational areas fall in the same categories as parks but indicates a somewhat lesser national importance.

Mr. MUSKIE. The final point I would make is this: yesterday I made a statement that was challenged by the sponsor of the Moss amendment when I said that industry, without exception that I could recall, urged Congress to put in place a congressional policy on nondegradation.

I did not say, as was implied, that industry approved the committee bill. I made it very clear that they do not, but they asked for a congressional policy to eliminate the uncertainties of EPA's regulations.

Here is some more material showing the extent of the study made by the Public Works Committee on these subjects.

It was asserted that we delegate much of the authority of EPA to the States. Well, we did both of those things in the committee bill. The effect of this amendment in the form in which it has been modified would repeal the EPA regulations, would normally enact the committee regulations into law, but would suspend them for a year. What would we have for a year? Nothing but confusion, chaos and uncertainty. The EPA regulations are in the courts. EPA is the process of administering, enforcing, establishing guidelines, telling everybody concerned what they can expect.

Then, those are repealed. Some new provisions are enacted into law, but nobody to implement them for a year. They are on the shelf, they are on ice. Those which have been put into motion under EPA's regulations are now suspended—State authorities, local authorities, industries, citizen groups who are interested in what is going to happen, all of this would be put in suspension for a year, and then at the end of the year, if anyone is under the illusion that the committee provisions would quietly go into effect, without protest or an effort to compromise them or to dilute them or to repeal them or to prevent their administration by EPA in the courts, simply does not understand the nature of the opposition to this legislative goal, to this public interest goal.

They stop at nothing in their efforts and in their ingenuity to stop the clock on this policy.

This amendment simply gives them another opportunity.

I do not question the Senator from Alabama's motivation. But this amendment would give them another opportunity to be able to procrastinate, delay, come up with new ideas to drag the matter through the courts. That would be the effect of this amendment.

Frankly, I think this has been studied enough for us to make a decision about a policy. That policy will not be fixed forever in concrete. There is no problem at all if we put some kind of discipline on growth, in removing that discipline later. But if we eliminate all discipline,

it is pretty hard to roll back undisciplined growth that takes place in the interim that would not have taken place but for a policy we subsequently adopt. We have learned that.

I brought this map to the chamber yesterday. Those red areas are the national parks, wilderness areas in excess of 5,000 acres. Most, if not all of them, were established because, among other things, they have air quality values that are in the public interest, for example, national parks with scenic views whose beauty is beyond compare in many instances.

The Alien amendment would deprive them of all protection for the next year. All protection for the next year and he says, "Well, what does that matter?"

I say to the Senator from Alabama. I have seen massive projects move pretty rapidly and if even the foundation is laid we hear the argument, "Well, gentleman, the investment we have already made is so enormous, so great, you ought to grandfather us out of any new policy."

I mean, that is what we have been doing.

Most of the objections to the Clean Air Act that have arisen over the years have arisen because of situations that are in place, and people are afraid that factories in place or powerplants in place will be closed down because of the requirements of clean air.

We are not talking about that with respect to nondegradation. We are talking about not putting something in place until we are sure that it will meet the public interest value of healthy air and other air quality values that over the years the public has demonstrated an interest in.

It is for those reasons that I object to this amendment.

MR. ALLEN. I have a modification that I wish to put in that will answer the Senator's objections to the doing away with EPA regulations in the interim.

I have stressed very strongly here that it does not do that, but I will offer a modification that will make it absolutely sure.

MR. RANDOLPH. I spoke earlier of the fact that we were not actually locking ourselves in. We are not closing down after the horse has left the stable.

Colloquially, I said, the horse moving in and out only to indicate that there is constancy of change. The only constant in legislation is the fact of change.

The National Air Quality Commission would have a mandate, as I understand it, much like that of the National Commission on Water Quality. It would examine the program in this bill and advise us on any modifications that might be needed.

While this study is being completed, the program authorized by section 6 would be enforced to protect the air in what we call clean air areas and permit well-planned development.

The Allen amendment could lead to increased pollution in those areas during this period of study. I think that is something we must concern ourselves with very carefully.

The suspension proposed of the Allen amendment would actually be 1 year longer if we think in terms of a total of at least 2 years before the Congress would address the issue. It would be 3 years before section 6 would become effective if it were not changed at a later date.

I think this is important to have this continuing study. This is true even though we had previous studies which indicated by the volumes which the Senator from Maine (Mr. Muskie) has referred to here today.

Under my amendment, I say to the Senator from Alabama, section 6 would be in effect during this period. I know we both understand that fact.

So, there are these changes which would remain in effect and yet the study would be moving forward as has been indicated.

Mr. MUSKIE. I would like to make this point about the Allen amendment.

As I understand the provision, it does not specify the period of the study, but we have assumed on the Randolph amendment it would take 2 years.

If it takes 2 years, that, in addition, the Allen amendment provides for suspension of a year after the report of the Commission.

Mr. RANDOLPH. That is what I was saying.

Mr. MUSKIE. So if the study takes 2 years, the suspension adds 3 years in which there will be no protection for these areas.

Mr. ALLEN. The amendment No. 2101 does not change the provisions of the time for the study which says that it should be not more than 2 years. Of course, it would be a much shorter period.

Mr. MUSKIE. On the record of the Water Quality Commission, I would disagree with the Senator.

Mr. ALLEN. That is what it says, not more than 2 years.

Mr. MUSKIE. But that potential for a full 2 years is very real.

Mr. ALLEN. As to the argument, which I feel is fallacious, that during the time of the study EPA's regulations would be suspended, that is not the intent of the amendment.

It has been stated time and time again that all power EPA now has, would continue in EPA and that section 6 would be suspended for a period of 1 year after the Commission makes its report.

To lay to rest any contention that the Senator is making about the powers of EPA during this interim period, I send a modification to the desk and ask that it be stated.

In line 6, after the word "investigation," strike the balance through line 9, and insert the following: "and during such study and such one-year period, the present EPA regulations shall remain in effect."

Mr. Allen's amendment (No. 2101), as modified, is as follows:

On page 2, line 11, strike the period and insert a semicolon and add the following: "none of which provisions shall be implemented or enforced until a period of one year shall have elapsed from the date on which the Commission submits the report required of it on the results of its study and investigation, and during such study and such one-year period the present EPA regulations shall remain in effect."

Mr. MUSKIE. Now what the Senator has done with this proposal is to put into effect two laws, the present law and the regulations under the law, and the law covered by the committee print. Which of these two horses does EPA ride? Is it the one that is now in effect, or the one that will come into effect, at the outside, probably at the end of 3 years? How does the agency devise its regulations to come out at the right place 3 years from now, to determine which of these two laws is the law of the land?

Mr. ALLEN. The Senator should not have any difficulty figuring that out.

Mr. MUSKIE. The Senator does.

Mr. ALLEN. He should not have, if he would read the amendment. I do not know whether he bothered to do that or not. If he would read the amendment, he would see that the provisions of section 6 are stayed for a period of 1 year following the report of the Commission. The amendment says that pending that time, the present EPA regulations would be in full force and effect. So if the Senator would bother to read the amendment, I do not think he would have any difficulty understanding it. Everyone else is able to understand it and I believe he could.

Mr. McCURE. I understood yesterday when this amendment was being discussed that it would take the character of the Scott amendment. I would understand now that it takes the character of the Moss amendment. I hope that is the correct interpretation.

Mr. ALLEN. No; I do not believe the Senator understands the amendment when he describes it in that way. The Moss amendment would not allow the enactment of section 6. The pending amendment does allow the enactment of section 6, but merely holds the operation and effect of that for a period of 1 year following the report of the Commission. So the uncertainty about whether section 6 would be enacted is laid to rest under the pending amendment. It would be enacted but it would not become effective.

Mr. McCURE. I understand the distinction the Senator from Alabama is making. The Scott amendment had the effect of suspending both section 6 of the bill and the current law. The Moss amendment had the effect of striking section 6 but leaving current law. It is my understanding that the Senator from Alabama wants to leave current law in effect pending the study and the 1-year period following the completion of the study.

Mr. ALLEN. The Senator has stated exactly right.

Mr. McCURE. I think the explanation of the Senator from Alabama may be more clear than the language of the amendment.

I say to the Senator from Alabama, and those who are concerned about the uncertainties in the committee bill, that the committee recognizes there are some uncertainties in the enforcement of the provisions of the bill. That is the reason for the study. I do not think that is any reason to oppose the committee bill. We recognized that we were not able to solve all the problems in this very complex area by the provisions of this bill. But we did solve some of them.

Those who would set aside the committee action and have us go back to the current law ignore the fact that the committee did produce something that reduces the areas of uncertainty. It did not solve all of the problems; it only solved some of the problems. Some of the problems remain. That is the purpose of the study, to see how the effects of the committee action really deal with some of those uncertainties that we were unable to solve.

I think the committee would be the first to say that the bill is imperfect; that it is not the final answer; that it does not have every "I" dotted and every "T" crossed; it does not remove all of the possible ambiguities; it does not have all of the answers in this very complex field. But it does provide some answers.

The committee bill, and the committee in its actions, sought to answer some of the very difficult questions that deal with baseline data;

that deal with the kind of modeling as to the buffer zones around the class I areas. EPA regulations can only deal with that peripherally. They are dealing with that, but there is great uncertainty in it. We have removed some of that uncertainty.

Let me reply to one of the things the Senator from Utah raised yesterday in regard to the pink zones on the map, which the Senator used in illustration of his argument.

Those zones are airshed regions, air quality regions. If there is one small zone of pollution within the entire region, it would show on the Senator's map as a shaded region.

We allowed the States, under our bill, to establish areas within the regions where we would deal with that area of pollution without affecting the decisions in the entire air region. That is an improvement. It is a removal of one of the ambiguities and uncertainties.

I cite that as only one example of many in which we sought to confine the uncertainty that now plagues everyone in the country in this field, and confess, in doing that, that we have not been able to solve all of the problems.

The committee was unable to agree on many issues. The bill does not contain all the language that I would have had in it, but it is an improvement over the current status. To suspend the provisions of section 6 and leave in effect the hiatus in which we find ourselves now seems to me not to be a service to anyone, but a disservice to the public interest as well as to the individuals or individual companies that may be affected by the provisions of this legislation.

I must respectfully oppose the Allen amendment because I think it betrays a misunderstanding of the choices that we are confronted with, existing law on the one hand or the improvement which is in the committee bill on the other hand.

We are not offered the choice of the best of all worlds as against the committee bill, as imperfect as it may be.

Mr. STAFFORD. By heavy majorities, the Senate yesterday twice rejected amendments in intent very close to this one. The Senate has decided the issue of significant deterioration. It has stated in the clearest terms that it believes that we need a national policy to prevent significant deterioration, and it believes that such a policy should be articulated by the Congress, not by the courts and EPA. Our bill does that.

The Senate bill provides a flexible approach, giving considerably more authority to the States. The Allen amendment, I suggest, restores the bureaucratic regulations of EPA for several years.

I think the committee's approach is superior.

Mr. MOSS. The Senator from Alabama was active in the debate when this body considered previous amendments on the nondegradation of air section of the act, and it seems to me he has evolved now an amendment that should be acceptable to the sponsors of the bill as well as others.

The amendment of the Senator from Alabama, as I understand it, provides that section 6, which does set a national policy, as the proponents have constantly said must be done, permits the enactment of section 6, so the statement of policy is clear, but it stays the implementation of that section until such time as the study has been completed that will tell us—all of our people, our industry, everyone—what the effects of that policy are going to be, and then the policy, unless we

wanted to amend it at some point, would come into force and effect just as written.

But in the meantime, to get over this argument that there would be a gap or a hiatus, which I heard the Senator from Idaho arguing for as he supported the Scott amendment yesterday, instead of having a hiatus when all regulation is pushed aside, the Senator from Alabama provides that we continue under the regulations in effect by EPA. Of course, court actions that interpret those regulations are the law of the land at this time, so they would remain in effect.

We would not have any great disruption. We would be going along as we are going now. I would be first to admit it is a little bit uneven, and I wish we could have everything clarified. But the fact that it is uneven and we are having problems indicates that we need the study, and we need the study before we shift over from what the present law is to what would be set out under section 6 of the bill.

The Senator from Maine was arguing that industry has been saying to Congress "Will you eliminate uncertainties?" Well, I think the amendment does eliminate uncertainties. It says—

Here is the policy that will come into effect after the study is completed. In the meantime, whatever is in effect now remains to govern what is done regarding air purity, and therefore as much certainty as can be provided is provided.

The one key thing is to find out where we are going by the study that is provided for in the amendment. It seems to me that the proponents of the bill have been in a divided position on this matter. They have argued strongly that this section must be put into effect now, and then the Senator from West Virginia has an amendment saying "We will begin the study thereafter, but we have shifted already to section 6." So the study thereafter, if it comes along, and if it finds flaws in section 6, would require us to go back and have hearings, hold legislative hearings as we talked of before.

So it seems to me, as it did yesterday and before when we talked about the matter, that we again are putting the cart before the horse. We want to fix the policy that is going to be there, and fix the standards which will be enacted, before we know what we are doing.

There has been some discussion about whether there has been enough studying made, and I suppose in this city, where we have lots of commissions and lots of studies that have little effect on legislation, no doubt some feel that we will just have another study thinking of it as a delaying thing.

I can understand, therefore, that the Senator from Alabama puts a limit on the time in which the report must be made. The amendment mandates that the study must be completed in "not to exceed."

So we have a limit.

Under the arguments of the committee and the proponents of the bill, there have been admissions that we are still uncertain, that we still do not know how this is going to work out. It is pleaded that we need to give a little more flexibility to the States, that maybe the States, in their actions, can eliminate some of the inflexibilities that may crop up in this matter, such as the map showing pollution zones that was put up yesterday.

I made it very clear when I put that map up that it is based on data EPA itself publishes, and I made it very clear that at this time it is the only data we have. It is shown by EPA that way. When you

plot it on a map, that is the way it looks, which again indicates some of the problems which we are still having.

Again let me say—that the reason I support the Allen amendment is that I think it will move us toward a policy in regulation of clean air which will enable us to consider other factors, such as employment, growth of industry, management of land—all of the other factors that ought to be considered before we lock in just one particular facet of our environment.

Mr. MOSS. We want to reach the highest degree of purity in the air. But we cannot look just at that alone. We have to look at what that means in the tradeoffs for other things. That is what the study is supposed to tell us.

It will tell us what this means in various areas of the country—what places would be precluded, for example, from raising pollution by a certain given amount, because they would bump into the standards, then, of the Clean Air Act.

The Senator from Maine made quite a statement about “Well, if these get started, and they are put in place, then you cannot change anything, you have grandfathered them out of regulation.”

I do not think it is at all possible that this could happen within a year's time. Second, I would say that in view of the experiences we have had in the western part of the country, the opposite is true.

The holdback in doing these things has been based on the threats of litigation and opposition that have been raised to those who were concerned about the air quality and what might happen if there were any kind of industrial or economic development.

I support the Allen amendment.

The issue is not clean air and dirty air. The issue is whether we are going to have continued balanced thought development in this country as we must have if we are to remain a viable and expanding population in this land.

Mr. BAKER. I do wish to note that the Senate yesterday twice rejected amendments that were very close to this one in intent. We have resolved the issue of significant deterioration. We voted, in the clearest terms, that we believe that there is a need for a national policy to prevent significant deterioration. We believe such a policy is better when detailed by the Congress, rather than the courts and EPA.

The PRESIDING OFFICER. The question is on agreeing to the amendment of the Senator from Alabama. The yeas and nays have been ordered.

Mr. GRIFFIN. I announce that, if present and voting, the Senator from Tennessee (Mr. Baker) and the Senator from New York (Mr. Buckley) would each vote “nay.”

The result was—yeas 23, nays 59, as follows:

[Rollcall Vote No. 465 Leg.]

#### YEAS—23

Allen	Griffin	Sparkman
Bartlett	Helms	Stennis
Byrd, Harry F., Jr.	Hruska	Stone
Byrd, Robert C.	Huddleston	Talmadge
Cannon	Laxalt	Thurmond
Eastland	Long	Tower
Fannin	McClellan	Young
Garn	Moss	

## NAYS—59

Abourezk  
Bayh  
Bellmon  
Bentsen  
Biden  
Brock  
Brooke  
Bumpers  
Burdick  
Chiles  
Church  
Clark  
Cranston  
Culver  
Dole  
Domenici  
Durkin  
Eagleton  
Fong  
Glenn

Gravel  
Hansen  
Hart, Gary  
Haskell  
Hatfield  
Hathaway  
Hollings  
Humphrey  
Jackson  
Javits  
Leahy  
Magnuson  
Mansfield  
McClure  
McGee  
McIntyre  
Metcalf  
Montoya  
Morgan  
Muskie

Nelson  
Nunn  
Packwood  
Pastore  
Pearson  
Pell  
Percy  
Proxmire  
Randolph  
Ribicoff  
Roth  
Scott, Hugh  
Stafford  
Stevens  
Stevenson  
Taft  
Tunney  
Weicker  
Williams

## NOT VOTING—18

Baker  
Beall  
Buckley  
Case  
Curtis  
Ford

Goldwater  
Hart, Philip A.  
Hartke  
Inouye  
Johnston  
Kennedy

Mathias  
McGovern  
Mondale  
Schweiker  
Scott, William L.  
Symington

So Mr. Allen's amendment, as further modified, was rejected.

Mr. RANDOLPH. The prevention of significant deterioration of air quality is an essential part of a comprehensive national air pollution program. The issue of significant deterioration has drawn more public attention than any other single feature of the Clean Air Amendments of 1970 and the pending Clean Air Amendments of 1976. The expressed concern is understandable.

Under the 1970 amendments, major new facilities are required to meet Federal new source performance standards based upon commercially available control technologies. However, the States are authorized to establish more stringent emission limitations. These requirements are imposed on new facilities whether in an urban area or in an undeveloped part of the air quality control region.

In this regard, S. 3219 provides a distinction between the requirements for new facilities in clean areas—where national air quality standards are not being violated—and in dirty areas—where such standards are being violated.

Clean air areas would be subject to EPA regulations and applicable provisions of the 1976 amendments. The States would be required to establish permit programs for all new major emitting facilities. These facilities would be required to adopt the best available control technology—the maximum pollution determined by the State on a case-by-case basis. This decision would be exclusively that of the State.

In addition, provision is made for evaluation of the impact of such new facilities on critical environmental areas such as international parks, national parks, and national wilderness areas, which exceed 5,000 acres in size.

Acceptable impacts are specified in the bill as increments for the two pollutants sulfur oxides and particulate matter.

The nondeterioration provision has implications for future growth. The amendment of Senator Frank Moss would have deleted this provision from the committee reported bill and authorized a study by the National Air Quality Commission as a basis for future legislation. However, the proposed amendment did not affect the regulations promulgated by the Environmental Protection Agency on nondeterioration. They would remain in effect without a congressional statement of policy.

The study amendment I offer would empower the National Air Quality Commission to study the social, economic, energy, and environmental implications from implementation of the nondeterioration provision of the 1976 amendments. A report to the Congress is required on recommendations for reconciling competing and conflicting national policies.

This charter would reflect concern that in striving to protect the environment we must also insure a healthy economy and improve job opportunities in the years ahead. This concern is reflected in the letters from the U.S. Department of Labor, the Department of Commerce, the Federal Energy Administration, and the Environmental Protection Agency, which I inserted in the Congressional Record on April 1, 1976.

The amendment I have introduced requires that the Commission on Air Quality give priority to a study of the implementation of the nondeterioration provisions. The study must include the impact of the statutory increments and their effect on the location and size of major emitting facilities and whether these effects are consistent with other national policies regarding the development of such facilities.

The purpose of the nondeterioration program is to protect air quality and the study would be incomplete if it did not evaluate the effectiveness of the legislation.

**Mr. STAFFORD.** I urge the adoption of this amendment, which will clarify the instructions to the Air Quality Commission regarding its evaluation of significant deterioration.

When the chairman of the Committee on Public Works initially raised this issue last week, Senator Buckley and Senator Randolph engaged in a colloquy on the intent of this provision. Because of the answers received, indicating that this amendment in no way seeks to delay implementation of a defined congressional policy to prevent significant deterioration, but instead seeks to monitor it, I support fully the adoption of the amendment.

**Mr. PERCY.** While I believe that we properly reaffirmed our commitment to improved air quality by clear congressional support for the policy of nondeterioration. I do support the proposals for continuing study of that policy's practical application. The study proposed by Senator Randolph would add significantly to the already enormous body of research available on the effects of nondeterioration, and will help Congress and the people of this country to make an informed and lasting commitment to the preservation of air quality and in the widest sense, to the preservation of life itself. That commitment must be total, and it must be founded upon an accurate under-

standing of the costs involved and the sacrifices which may be required. I believe that we will pay the costs and make the sacrifices, but I also believe the decisions to do so must be based on real and reliable data demonstrating the effects of the proposed standards on our economy, our energy supply, our employment picture, and our present patterns of wasteful consumption.

Our system of government requires a constant balance of priorities and at times we are faced with extremely difficult choices. At times, choices are presented to us in misleading and inaccurate terms. While I believe that we can find solutions reflecting both economic and environmental goals, the controversy over the Clean Air Amendments of 1976 has too often been described as a choice between cleaner air and economic development. It is unfair to present to the people a biased choice between acceptable air quality and employment, and it is the responsibility of us all to seek ways to provide both.

It is misleading to suggest that economic development must be frozen into existing structures and will be stopped by restrictions on pollution of the environment, when commonsense suggests that the redeeming of our planet is in itself an unlimited growth industry. Too often this legislation has been presented to us in terms of growth versus no-growth. That, too, is misleading. Under this bill, industrial expansion will be permitted nearly everywhere in the United States. We should remember, however, that in business and in government, as in individuals, growth need not always mean physical expansion. Growth means broadened awareness of social responsibility; growth means reaching out to strengthen the bonds that bind us to each other and to the larger community; growth can lead to maturity—not always just to a proliferation of new products, institutions or activities without regard for other considerations.

Supporters of the industrial status quo underestimate American business, whose continuing record of scientific and technological achievement has been unequaled, and whose response to challenge has exemplified all that is best and soundest in our system of free enterprise, individual initiative and democratic government. I have faith in the ability of American business to interpret national goals in the national interest and to develop and implement technologies which will one day free us from choices which appear to some as choices between a healthy economy and a healthful environment.

The study proposed by Senator Randolph will help us to achieve our economic and environmental goals.

Mr. ROTH. I think most of us recognize the seriousness of this issue and the need for a thorough and independent study to provide us with concrete, factual data on the economic and other impacts of section 110(g). For this reason, I will vote for Senator Randolph's amendment.

Mr. RANDOLPH. Is it understood that there will now be the rolcall on the amendment offered by the Senator from West Virginia?

The PRESIDING OFFICER. The yeas and nays have been ordered.

I announce that, if present and voting, the Senator from Tennessee (Mr. Baker) and the Senator from New York (Mr. Buckley) would each vote "yea."

The result was—yeas 83, nays 1, as follows:

[Rollcall Vote No. 466 Leg.]

YEAS—83

Abourezk	Gravel	Muskie
Allen	Griffin	Nelson
Bartlett	Hansen	Nunn
Bayh	Hart, Gary	Packwood
Bellmon	Haskell	Pastore
Bentsen	Hatfield	Pearson
Biden	Hathaway	Pell
Brock	Helms	Percy
Brooke	Hollings	Proxmire
Bumpers	Hruska	Randolph
Burdick	Huddleston	Ribicoff
Byrd, Harry F., Jr.	Humphrey	Roth
Byrd, Robert C.	Jackson	Scott, Hugh
Cannon	Javits	Scott, William L.
Chiles	Laxalt	Sparkman
Church	Leahy	Stafford
Clark	Long	Stennis
Cranston	Magnuson	Stevens
Culver	Mansfield	Stevenson
Dole	Mathias	Stone
Domenici	McClellan	Taft
Durkin	McClure	Talmadge
Eagleton	McGee	Thurmond
Eastland	McIntyre	Tower
Fannin	Metcalf	Tunney
Fong	Montoya	Williams
Garn	Morgan	Young
Glenn	Moss	

NAYS—1

Weicker

NOT VOTING—16

Baker	Goldwater	McGovern
Beall	Hart, Philip A.	Mondale
Buckley	Hartke	Schweiker
Case	Inouye	Symington
Curtis	Johnston	
Ford	Kennedy	

So Mr. Randolph's amendment (No. 1798) was agreed to.

Mr. RANDOLPH. Mr. President, the Senate has expressed its desire with respect to the issue of significant deterioration by defeating the amendments offered by the Senator from Virginia (Mr. William L. Scott), the Senator from Utah (Mr. Moss), and the Senator from Alabama (Mr. Allen). It is now clear that the Senate supports the inclusion within the Clean Air Act of the concept of significant deterioration.

It is my hope that the National Commission on Air Quality study of significant deterioration as modified by my amendment represents the composite thinking of the Members of the Senate. Even though many studies of this issue have been made, the committee does not profess to have all of the answers. The purpose of the Commission is to complete a comprehensive study to provide the Congress with all the facts on which future decisions on significant deterioration can be based.

## AMENDMENT NO. 1610

Mr. GARY HART. I call up my amendment No. 1610 to the pending legislation and ask that it be considered.

On page 79, line 6, after the phrase "major emitting facility" insert "or other source".

I ask for the yeas and nays on this amendment.

The yeas and nays were ordered.

Mr. GARY HART. This amendment goes to a portion of the clean air bill known as the nondegradation section.

To define what significant deterioration is, with respect to specific pollutants, the committee has incorporated in the bill a set of numbers—the so-called "increments"—that specify the allowable change in ambient air quality. These "increments" are technical measures of the amount of total additional pollution that may be added to the ambient air by a single new major facility or series of facilities.

These increments I am describing are the same for all nondeterioration areas, thus providing equity for all areas of this country. The increment, of course, is measured from the baseline ambient air quality. The increment would thus be in addition to whatever levels of pollution exist from present sources.

The chief tool to be used in implementing the no significant deterioration requirements is the permit that must be issued by the State for any major emitting facility to be located in any clean air area. The bill defines major emitting facility for this purpose as any source that falls into one of 28 industrial categories listed in the bill, if the source would also have the potential to emit more than 100 tons of any pollutant per year. If a source falls in a category listed but would be smaller than the 100 tons per year figure, it is not subject to any of the procedures in this act.

The intent of the committee in exempting non-major sources from the act was to simplify implementation by limiting regulation to the largest potential polluters. Superficially, at least, this appears to make good sense. Regulations and permits which would cover all emission sources would pose an intolerable regulatory burden, undoubtedly causing more problems than they would solve.

## THE COMMITTEE PROPOSAL WILL CREATE A BUREAUCRATIC NIGHTMARE

On the other hand, the carte-blanche exemption of nonmajor sources, in my judgment, provided in the committee bill would create a bureaucratic nightmare, for this exemption dictates that the growth "increments" would apply only to new major sources. Pollutants contributed by new nonmajor sources, not defined except by the limit of 100 tons of pollutants per year, would not be included. This means that permit applications for all but the first new major facility in any area would have to include technologically complex "pollutant origin assessments" in order to determine how much of each pollutant growth increment remained available for use in that area.

## EXAMPLE OF THE PROBLEM: CREATED UNDER S. 3219'S PROVISIONS

Perhaps an example would best illustrate the problem associated with the proposed procedure. Let us assume that, after enactment, a

new primary lead smelter is constructed by the Rolling Stone Manufacturing Corp. near the Mossy National Park, a class I increment area. In addition, let us assume that numerous other small industrial facilities subsequently are attracted to this same area as well as the normal complement of support services including both commercial and residential development.

According to the committee bill, under the circumstances only the large smelter would be subject to the best available technology and emissions permit requirements. The smaller industrial, commercial and residential facilities which were subsequently added and which individually would emit less than 100 tons of sulfur dioxide per year, would have been exempt from the permit-granting procedure. My amendment would not affect this in any way.

Now let us assume that 10 years later, Rolling Stone Manufacturing decides to construct a large sulfuric acid plant, and considers among other locations, a second site near Mossy National Park. According to the committee bill evaluation of the sulfuric acid plant's emissions permit application would require not only measurement of the sulfur dioxide concentration in Mossy National Park, but in addition, the bill would require determination of how much of this sulfur dioxide is contributed by the smelter versus the contributions to pollution levels from ancillary development and "old"—previously existing—facilities. This complicated pollution origin analysis would be required because the committee bill provides that growth "increments" apply only to pollutants from new major sources, thus requiring any subsequent applications for a permit to be accompanied by an analysis which determines where existing pollution came from.

#### THE EXEMPTION OF NON-MAJORS ALSO IS CONTRARY TO THE INTENT OF THE CLEAN AIR ACT

It seems to me, in addition to the totally unnecessary administrative burden added by this procedure, eliminating consideration of pollutants contributed by nonmajor facilities constructed after enactment is entirely contrary to the intent and purpose of the Clean Air Act itself. Sulfur dioxide is sulfur dioxide—and it does not matter whether it comes from one large major source or from one thousand small non-major sources. The effects are still the same. My amendment No. 1610 would require that pollutants, regardless of source, be considered and counted against the increments.

#### HOW AMENDMENT NO. 1610 WOULD SOLVE THESE PROBLEMS

This amendment would modify the definition of the increments—to allowed increases in pollution levels—to include pollution from all sources, not just major facilities. Pollution from both major-emitting sources as well as areawide growth, including all growth that occurred, would be counted against the allowed increases in pollution.

This change in the definition of the increments will not extend or expand the permit-granting procedure envisioned in the bill. Only major facilities would be subject to the permit procedure. However, when a major facility is planned in an area, the total increase in pollution levels since the construction of the first major facility in the

area must be considered in determining whether pollution from the proposed facility will exceed the allowed levels.

#### HOW SIGNIFICANT WILL EFFECTS OF AMENDMENT BE?

This is not a theoretical problem of little significance. Depending on the type of growth in any area, the contributions to air pollution can play an important part in air quality.

A report recently prepared for me by the Office of Transportation and Land Use Policy of the Environmental Protection Agency, begins with the following statement:

Residential, commercial and institutional facilities resulting from general areawide growth play a significant role in determining overall air quality. Their accompanying fuel needs for space heating and solid waste disposal facilities represent substantial contributions to an area's air pollution.

The report goes on to document this statement. It cites, for example, a location in Ocean County, N.J., where in 1972, ancillary "areawide growth" already accounted for 45 percent of the total estimated that by 1990, in this area, areawide growth in this region will account for 72 percent of the particulate air pollution. In addition, the report indicates that areawide sources now contribute over 68 percent of the particulate air pollution in Denver, Colo. The Environmental Protection Agency concludes that—

Areawide growth, accounts for a substantial percentage of total emissions. Projected increases or decreases, of course, depend to a large extent on the air quality maintenance program within a specific region. It is important to realize, however, that facilities resulting from general areawide growth play a major role in determining overall air quality.

That entire quote is from the EPA study.

#### THE AMENDMENT IS CONSISTENT WITH THE COMMITTEE'S CONCERN REGARDING ANCILLARY DEVELOPMENT

On page 23 of the report:

In studying the permit application, the State must examine the growth associated with any proposed facility in terms of other industries that might be attracted to the area and associated with the facility, and its effect on support services, and the residential, commercial, and transportation needs accompanying the facility.

This is not a question that should be left solely to one sentence of legislative intent in a committee report. This is a crucial issue which should be addressed in the language of the bill itself, and that is why I offer this amendment.

It is not enough to say that States "must examine" the potential effects of future nonmajor growth during review of an application to allow further major growth. The review process must also include a continuing mandate to consider actual levels of existing pollutants—regardless of their original sources.

The following arguments in summary, I think, add up to why I am offering this amendment.

#### POINTS IN SUPPORT OF SOURCE AMENDMENT

First. It reduces the administrative burden of making pollutant source evaluation and streamlines what would otherwise be a cumber-

some evaluation procedure to assess the remaining pollutant increment balance.

Second. It is consistent with the intent and purpose of the Clean Air Act. Since pollution—no matter what its origin—has the same effect on the environment and public health.

Third. The amendment does not extend or expand the permit-granting process to nonmajor sources.

Fourth. The amendment does not extend best-available technology requirement nor any other regulations to nonmajor facilities.

#### CONCLUDING STATEMENT

It is obvious that nonmajor sources make the substantial contribution to air pollution in most areas. The extensive record made by the Public Works Committee justifies that conclusion. I acknowledge that it would be next to impossible to extend rigid emission control measures to all sources. We must focus our attention on the biggest problems first—and with respect to emission limitations, that means concentrating on major sources.

However, in conjunction with this, we must acknowledge the potential for substantial emissions from new nonmajor sources. This can be done simply and effectively by requiring that the "increments" apply to pollutants regardless of source, as provided by amendment No. 1610.

Mr. McCLURE. I must, with reluctance, oppose the amendment offered by the Senator from Colorado (Mr. Gary Hart). I know what he is talking about when he says that there is a void in the bill and that this amendment would plug that void, that it would make more precise what has been left somewhat vague by the committee action. But I do not believe this can be achieved with this amendment. It could create major administrative problems in pollutant source evaluation. I believe that it imposes a much more, perhaps infinitely more, difficult burden in evaluating all sources of pollution and in controlling all sources of pollution in the clean air areas.

Throughout the entire deliberation of this bill, we have recognized that in some of these troublesome areas we have allowed the States the latitude to take actions where they feel they can do so.

As was stated during the debate on the Randolph amendment, one of the reasons for the Commission study was the fact that we are not certain that we know how to tie down every loose end in the pollution control field. This is one of those loose ends. I think we must confess that at the outset.

I do not disagree at all with the distinguished Senator from Colorado. But how can a permit program, geared to individual major sources, be meshed with the related growth, such as housing developments, roads, and the supporting facilities associated with that major source? If a permit is granted for a powerplant that uses up the entire particulate increment in an area, does that mean that a new dirt road or a parking lot associated with that powerplant could not be built? Would it mean that a new dirt road associated with a quarry operation in the same area could not be built? Does it mean that a parking lot in conjunction with a new shopping center could not be installed in the same area?

I do realize that inconsistency exists in establishing a permit system for major sources without affecting nonmajor sources. But I be-

lieve that this is something that each State should address on its own, without Federal guidance at this time. I am confident that the Air Quality Commission will address this issue in its evaluation of the implementation of nondegradation, to see if there is a reasonable way to handle this question.

There is no question that no mechanism exists to control the emissions of nonmajor emitters. But what is the most effective tool to control nonmajor emitters? It would seem to me that the obvious, most effective tool has to be overall community design.

We must talk about the type of fuels that are used in home heating. I am sure we would eventually become involved in land-use decisions, and tightly administered zoning restrictions in order to achieve control over the nonmajor sources.

MR. GARY HART. To address the misapprehension or perhaps the misunderstanding of the purpose of this amendment, first of all, it says that for any State issuing a second major polluter permit under the terms of this bill, one air quality measurement be made of not only the effect of the first polluter but the ancillary growth which has occurred with that first major polluter.

It is not a series of individual source measurements; it is just one total measurement for all of the growth, the first major polluter and all that has happened since then, to determine whether the standards for that area have already been exceeded by the major polluter and the collection of individual polluters.

It does not give the EPA or any Federal agency the authority to take measurements on a roadbuilding project or any other individual construction project. It merely says when the time comes to issue a second major polluter permit, the total pollution level in the area from the first major polluter and all ancillary growth be added together. So it is not a scientific nightmare. In fact, it is a very simple project.

Second, it does not tie the States' hands because the States would be doing this. We are merely telling them to do formally in the language of the legislation what the committee's report already exhorts them to do. I will cite the language in the report, at page 23.

In studying the permit application, the State must examine the growth associated with any proposed facility in terms of other industries that might be attracted to the area and associated with the facility.

Road building, motel building, any other project.

We have already said in the legislative history that the State must do this. All my amendment does is to formalize that exhortation by the committee to the States in the formal language.

MR. McCURE. I have a different view of the effect of the amendment. I think it poses an absolutely impossible administrative burden. I do not see anyway that it can be translated into administration. That is one of the problems we confront as we go through all of these complex and interrelated decisions that affect every bit of human activity within any given area. How do we administer something like this? I do not believe we can.

The committee discussed this rather fully as we went through the markup sessions and discussions of this bill. How in the world do we write something that the administrator can go out and administer?

One of the things that we decided in trying to determine our approach to the class I, class II, and class III regulatory approach of EPA was the establishment of two classes and the elimination of the

third. At the same time, we placed some administrative flexibility into the administration so that the single, class II encompassed within it several shadings.

One of the ways in which the committee resolved the question was to say that increments would be charged only against major emitting sources. That is both a flexibility and a tolerance level which the Senator from Colorado finds to be too great, but the majority of the committee found to be acceptable. That is the reason why it was written in. It was not inadvertent. It was not accidental.

Mr. GARY HART. No; I did not suggest it was accidental, but my recollection of the committee's deliberations was that we did not spend very much time on this; we did not discuss it thoroughly or debate it at great length; we just sort of slid over it, to consider how it could be done.

I think it can be done, by adding three words: "or other sources." It just means they would have to report on all sources of pollution. It is no scientific nightmare.

Mr. McCLURE. It is no scientific nightmare; it is an administrative nightmare.

Mr. GARY HART. Why is that?

Mr. McCLURE. In trying to achieve some of the current goals in some of the dirty air areas, and in trying to achieve some of the last bits of cleanup to achieve primary standards in some areas, EPA promulgated some transportation strategies. We found that they were administratively impossible and publicly unacceptable. And so EPA has had to back off, not because it was not theoretically possible, but because, as a practical matter, they could not do it.

Mr. GARY HART. But my amendment does not require the inspection of transportation or any other strategy. It says that when they measure the quality of the air in giving that second permit, they have to measure all the total growth that has occurred. It is very simple; it just requires that they make a total measurement.

Mr. McCLURE. I am sure the Senator perceives it as such. I do not.

One of the problems in this area that it seems to me must be faced is whether or not we intend, by this amendment or this series of amendments, to get into the question of land-use planning or Federal zoning.

The committee did discuss not only this issue at some length, but also the question of land-use planning and the exercise of what is otherwise reserved for the States under the police powers.

The committee said on numerous occasions, in its deliberations—and I hope made it quite clear in the report—that this is not a back-door approach to land-use planning or a back-door approach to Federal zoning.

Yet when we get into the composite result of all of the human activity in an area that will be measured against the increments in these areas, we get into this very precise area where we said we would not. The amendment of the Senator from Colorado, in my opinion, sets us in the other direction, the direction in which the committee very distinctly, positively, and deliberately said we would not undertake to move at this time.

The subcommittee rejected the idea. It was not done casually. There was a debate about it. The committee rejected the idea of applying increments to mobile source-related pollution.

If transportation controls were unsuccessful in dirty air areas where human health is at stake, where the standards are being violated at this time, how could we expect to get public support in an area where public health is not at stake, where it is only a question of incremental pollution? That is the issue. I think it is important for us to avoid walking into the traps that are sometimes set for the unwary.

I think that the regulatory complexity of the program would increase. The measurement of the ambient air quality is certainly a simple matter. I agree with the Senator from Colorado on that. But it is more than that. It is not simply the measurement of the ambient air quality. It is the measurement of the contributions by individual sources. Inevitably that will happen, not immediately but ultimately. I think the manpower and resource needs of local and State governments would inevitably be increased.

But beyond that, as I said at the beginning, there is some uncertainty as to how far we can go in the nondegradation field at the price of certain flexibility, some cushions, some margins with which we felt we could live. One of the elements in that margin was the way in which we measure the effect in the nondegradation areas of major emitting facilities.

I think when you look at it as a whole, the actions taken by the committee would be negated, in large degree by the amendment of the Senator from Colorado.

For those several reasons, I must oppose the amendment of the Senator from Colorado.

I think we should also recognize, that we do not have the necessary base line data. The Senator's amendment applies only to the measurements that occur after we have base line data. But that is simply saying that if there is no major emitting facility seeking to move into one of these areas, the general growth of the area will be treated in one manner, but after a major emitting facility has moved into the area it will be treated in another manner.

I think that illustrates the unevenness with which this would be applied. But it also begins to illustrate some of the incentives for more rapid growth than would otherwise occur. There would be every reason in the world for a major emitting facility to get in and use up the entire increment early. There is every incentive on the part of local governments to make certain they do not use up merely a portion of the increment allowed, but that they use all of it at once, or they will lose it. So I think it may indeed work to thwart what the committee is attempting to do in bringing about an orderly growth process, stimulating more rapid growth in some areas than would otherwise occur.

Mr. DOMENICI. While I oppose the amendment, I certainly commend the Senator for bringing to the Senate one of the real evolving issues as we try and establish a nondegradation policy for this country. Obviously, the Senator has pointed out one of the serious problems we may have in a few years, as we, by permit control the location of new polluters.

I think the amendment should be defeated. First, it is obvious for all of us that we are undertaking a national policy that is going to be very difficult as we move down the road to administer and to monitor, and I for one certainly think that in 2 or 3 years we are going to be back looking at various changes that might be required. Maybe it will

be in the increments, maybe it will be in the modeling, it may be in any number of things. Perhaps it will be another pollutant that should be added to that which we are modeling for.

Given these difficulties, I think we ought to leave in place the policy of the Committee as far as the Federal interest is concerned, and in effect concentrate on major polluters. But I would say to the Senator that consistent with our theory, we are not saying the States cannot do what the Senator is asking, for indeed they can. I think this law is broad enough to permit the States to go beyond the federal requirements and take a look at all the polluters in the area.

Second, it appears to me that the Air Quality Commission we have established will be looking at this. It will be looking at ways and means of doing the entire job of nondegradation better.

I honestly think that we have told the Senate in our efforts here to defeat the Moss amendment, the Allen amendment, and other amendments, that we have a workable reliable game plan, that it incorporates State flexibility, and indeed we are undertaking a national policy which we feel has a chance of working. I think ours will. I think if we impose the Federal mandate on the nonmajor emitters we are going to have a mass of confusion in the early stages of implementation, and I do not think we need it. I do not think we are going to harm our pristine areas if we wait for the evolution of nondegradation to address nonmajor emitters.

Mr. GARY HART. First of all, there is nothing in my amendment that requires any Federal land-use planning whatsoever. It would not expand in any way the role of the Federal Government in land-use planning. I wish the record to be very clear, in response to what the Senator from Idaho said, that there is no Federal land-use planning in this bill or in this amendment.

Second, as I stated in my opening remarks, in many areas, including Denver, Colo., and other areas of the country, it is the ancillary growth, the small growth areas, small growth operations, or construction projects which end up being collectively the major polluter. To say we are taking care of the major polluters first and worry about the small polluters next misses the whole point. In many areas it is the collection of small polluters taken together which deteriorate the air worse than the major polluters. To say to the States, "We hope you will take care of this," is, I think, to neglect our responsibility for the public health of the people of this country.

All this amendment does is mandate by law what the committee report says the States ought to do anyway.

Finally, vague general statements were made about the complexity of measurement. It is going to be much more complex to measure the amount of pollution coming from one major polluter as opposed to the collection of minor polluters, which the States are going to have to do without this amendment than to do it the way my amendment proposes. My amendment simplifies the measurement requirements of this bill and does not make them more complex.

Mr. McCLOURE. I shall set the context of one statement that was made by the Senator from Colorado. I think we need to be very certain that, when we are talking about associated growth of a major emitting facility, the bill and the committee report requires that study of the associated growth be included in the analysis in the permit applica-

tion. But that associated growth is not included within the increment of pollution, which is allowed in the clean air area under the committee bill. So while it is analyzed and is included in the decisionmaking process, it does not count against that increment of pollution that otherwise would be allowed within that area. I do not want the record to be ambiguous on that point.

So, the remarks that I made earlier with respect to the associated growth of a major emitting facility I believe are still correct and supported by the provisions of the bill. I make reference to those that appear in the bill on the bottom of page 13 at line 22—subsection (c) of section (4)—and on the following page, page 14, line 4—subsection (e).

These are not to be confused with a portion of the pollution that becomes a part of the incremental growth in pollution, which is allowed under the provisions of the bill.

What it boils down to is that really what the Senator desires is to tighten the increments. The increments are more generous than the Senator from Colorado would have permitted. This amendment has the effect of shrinking the size of the increments, which is not what the committee intended.

#### AMENDMENT NO. 1644

Mr. HATFIELD. I call up my amendment No. 1644.

The Senator from Oregon (Mr. Hatfield), for himself, Mr. Gary Hart, and Mr. Haskell, proposes an amendment numbered 1644.

On page 11, line 25, insert after "of 1976," the following: "and each national monument which exceeds ten thousand acres in size and which was established or is managed to preserve natural areas,".

Mr. HATFIELD. I have been joined in this effort by my colleagues from Colorado, Senators Hart and Haskell, and my colleague from South Dakota, Senator Abourezk. The purpose of our amendment is to include national monuments in excess of 10,000 acres, and which are managed by the National Park Service as natural areas, under the class I category contained in section 6 of the committee bill.

As my colleagues know, it is the intent of those of us who support the concept of nondegradation to protect those areas which currently exceed Federal ambient air quality standards. The bill designates these "clean air" areas as either class I, where no significant deterioration of air quality will be allowed, or class II, where some controlled air deterioration will be permitted based on a State-administered permit system. Those areas which this legislation specifically mandates as class I are Federal lands and include all international parks regardless of size and each national park, wilderness area, and memorial park exceeding 5,000 acres. All other class I designations would be left to the discretion of the States with the approval of the Federal land manager. This amendment would extend to certain national monuments, which are every bit as beautiful and worthy of preservation in their natural state as national parks and wilderness areas, the same protection granted to other Federal lands by this bill. Our proposal carries the committee bill to its next logical step.

At this time, I direct the attention of my colleagues to the map on the Senate floor which indicates those national monuments to be included in the class I category by this amendment.

I ask to have printed in the Record a list of the monuments.

*National monuments—Over 10,000 acres and managed as natural areas*

Alaska :	(Acreage)
Glacier Bay-----	2, 805, 269
Katmai -----	2, 792, 137
Arizona :	
Chiricahua -----	10, 648
Organ Pipe Cactus-----	330, 690
Saguaro -----	79, 988
California :	
Channel Islands-----	18, 384
Death Valley (Nevada)-----	2, 067, 966
Joshua Tree-----	559, 947
Lava Beds-----	46, 500
Pinnacles -----	14, 497
Colorado :	
Black Canyon of the Gunnison-----	13, 672
Colorado -----	17, 668
Dinosaur (Utah)-----	211, 050
Great and Dunes-----	36, 666
Florida : Biscayne-----	103, 701
Idaho : Craters of the Moon-----	53, 545
Nevada : Death Valley (California)-----	2, 067, 966
New Mexico : White Sands-----	145, 334
Oregon : John Day Fossil Beds-----	14, 405
South Dakota : Badlands-----	243, 302
Utah : Dinosaur (Colorado)-----	211, 050

Mr. HATFIELD. On August 25, 1916, the National Park Service was established within the Department of the Interior by act of Congress. The act states, and I quote :

The service thus established shall promote and regulate the use of the Federal areas known as national parks, monuments and reservations . . . by such means and measures as conform to the fundamental purpose of the said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in which manner and by such means as will leave them unimpaired for the enjoyment of future generations.

In their "Index to the National Park System," the National Park Service indicates that a national monument "is intended to preserve at least one nationally significant resource." Natural areas, according to the National Park Service, are those areas "of land or water of such scenic and scientific value and quality as to be worthy of preservation as a national park, national monument, or national preserve." Those monuments included in this amendment, while not having been designated as national parks or wilderness areas by the Congress, as is required by law, are just as worthy of protection against air pollution as any of the other regions protected by the bill itself. As national monuments they are already excluded from any industrial, real estate, or other type of commercial development.

When Congress created such land designations as national parks, wilderness areas, and monuments, as long as 80 years ago, it was with the intent to preserve for later generations the natural beauty and historical or scientific value of these areas. In many cases this was done before the threat of air pollution was a reality. Now that we face the potential of encroachment of the clean skies over these natural areas by air pollution, it would be irresponsible not to protect them in the same way that we have protected the land itself.

The Director of the National Park Service, Mr. Gary Everhardt, indicates his support of the nondegradation concept in the following statement issued as a response to the draft environmental impact statement for the Kaiparowitz power project in Utah:

Some of these parks were established wholly or partially to preserve in perpetuity the dramatic vistas and scenic landscapes of one of the world's most significant geological areas. Areas within them have been recommended for preservation as wilderness under the Wilderness Act of 1964, or are under study for such designation. Deterioration of the air quality, however minor impairs the significance of these resources. Projects entailing such deterioration are therefore inimical to the legislative purpose of these parks and to the purpose for which wilderness areas within them are being established.

I would submit to my colleagues that this statement is just as valid for the national monuments included in this amendment.

I ask that an exchange of correspondence between me and the National Park Service concerning nondegradation in general and this amendment in particular, be printed in the Record.

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,  
Washington, D.C., May 12, 1976.

MR. GARY E. EVERHARDT,  
Director, National Park Service, U.S. Department of the Interior, Interior Building, Washington, D.C.

DEAR MR. EVERHARDT: As I am sure you are aware, S. 3219, the Clean Air Act Amendments of 1976, has been reported by the Public Works Committee, and is expected to come up on the floor of the Senate soon. As reported by the Committee, section 6 of S. 3219 amends section 110 of the Clean Air Act by adding a new subsection (g). The new subsection would require state implementation plans to provide for designation as Class I areas of all international and national parks, national wilderness areas, and national memorials over 5,000 acres. Moreover, national parks and national wilderness areas subsequently established would be Class I areas unless redesignated as Class II by agreement of Federal and state authorities.

I will be introducing an amendment on the floor which would expand the types of land to be accorded such initial Class I protection to include all national monuments in excess of 10,000 acres, and which have been or become classified as natural areas by the National Park Service.

In order to prepare for floor debate on this section and on my amendment, I would appreciate your professional advice concerning the effects of air pollution, including particulates and sulfur oxides as well as other pollutants, on the resources administered by the National Park Service and on the public use and enjoyment of these resources.

I particularly request your opinion as to the desirability of according the Class I level of protection to the specified national lands. Thank you very much for your attention to this matter.

Warmest regards.

Sincerely,

MARK O. HATFIELD,  
U. S. Senator.

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NATIONAL PARK SERVICE,  
Washington, D.C., May 26, 1976.

HON. MARK O. HATFIELD,  
U.S. Senate, Washington, D.C.

DEAR SENATOR HATFIELD: The National Park Service operates under the principle that units of the National Park System are special, they are unique areas of nationally significant ecological and environmental value. Their unique status is boldly and repeatedly stated in the Acts of Congress and Executive Proclamations which established them. It is plain that the physical environment of these unique areas must be enhanced and preserved. To permit environmental deterioration of these areas would be unconscionable.

There is no question about the fact that any increase in air pollutants would have an adverse effect on the flora, fauna, and historic buildings in the National Park System, as well as detract from the quality of the experience of those who utilize the resources. The following was concluded by the National Park Service after studying the impact of the proposed Kaiparowitz coal-fired powerplant in Utah: "Air pollution from the plant will create a significant esthetic intrusion and will substantially reduce visitor appreciation of scenic resources within 60 miles of the plantsite. Visitors to Bryce Canyon National Park and Glen Canyon National Recreation Area, which total in excess of one and a half million annually, will be the most affected units of the National Park System. Air pollution will also cause visual and esthetic impact for a moderate degree for up to 100 miles of the plant and beyond. Air pollution will decrease the overall value of a recreation experience within the affected region and it is quite probable that the growth in recreation use will be adversely affected for the life of the project. It is estimated that up to 3 million recreation use days would be lost, as would an associated \$24 million of tourism related expenditures. Tourism related income is extremely important to the economic vitality of the region. An estimated \$78 million of recreation value will be lost to those who choose to visit the region regardless of lower air quality."

From a vegetational point of view, most units of the National Park System have the potential for adverse vegetational effects, should man's activities increase in an unchecked manner. To compound this, little information is available at this time on the response of Native vegetation to photochemical oxidants and their interactions with other air pollutants. While some degree of selection pressure is operative on the vegetation, man's unregulated activities and the ensuing increased stress can result in the long term decline of natural vegetation as evidenced by plant species in the San Bernardino National Forest.

Sulphur dioxide is the most important primary air pollutant in the United States. Serious vegetational effects from this pollutant have been observed in many areas, with the most serious effects being found in close proximity to sources. While the advent of stringent regulatory laws has somewhat lessened the pressure since most new installations are meeting the Federal secondary standard (0.5 part per million average for 3 hours once a year per locality), any increase in sulphur dioxide will certainly result in very serious effects on vegetation.

Ambient air is never composed of a single air pollutant. Vegetation is continuously under the influence of the total stress, with one or more air pollutants causing a greater stress. Furthermore, vegetation under air pollution stress, may become more susceptible to other biological disease causing agents.

We realize that it will be difficult if not impossible to implement Class I restrictions in some of the smaller parks and monuments, particularly those situated in or near urban areas, but the protection afforded the larger units of the National Park System by section 6 of S. 3219 is a positive approach and in the long-term best national interest. I think the vast majority of the American people wish to protect their great national parks from ill planned adverse impacts.

The benefit of section 6 of S. 3219 and your proposed amendment is much more basic. It is founded upon the fundamental concept that the environment must not be spoiled by non-natural means. It is based on the fact that the air itself not be damaged, or, to be precise, not significantly damaged.

I am enclosing a list of the national parks which will receive Class I protection under section 6 of S. 3219 as now written and a list of the national monuments which will receive Class I protection under your amendment.

Sincerely yours,

RICHARD C. CURRY,  
*Associate Director.*

Mr. HATFIELD. Mr. Richard C. Curry, Associate Director of the National Park Service, reiterates Mr. Everhardt's position that, in the words of Mr. Curry:

The National Park Services operates under the principle that units of the National Park System (which include monuments) are special, they are unique areas of nationally significant ecological and environmental value. He goes on to say that, "It is plain that the physical environment of these unique areas must be enhanced and preserved. To permit environmental deterioration of these areas would be unconscionable.

Congress would be mistaken, now that the Senate has endorsed the nondegradation concept, not to treat national monuments with the same concern and care that we will grant to national parks with passage of this legislation. Although national monuments are generally considered to be of lesser beauty and importance than our national parks, this is very often not the case, and certainly is not with most of the monuments included in the amendment.

Legally the only difference between a national park and a national monument is due to the fact that Congress must pass legislation creating a park, while monuments can be established either by action of the Congress or by a Presidential order. National parks such as the Grand Canyon, Olympic, Arches, Capitol Reef, and Zion all started out as national monuments.

While it is often assumed that national monuments are much smaller than national parks, two of the largest areas in the National Park System are monuments—Glacier Bay, 2,805,269 acres; and Katmai, 2,792,137, National Monuments in Alaska. Furthermore it is my understanding that, like many other monuments, they are every bit as spectacular as any national park. Death Valley National Monument in California and Nevada, and Oregon Pipe Cactus National Monument in Arizona represent two of this country's best desert landscapes, for example.

Some of our monuments, Joshua Tree and Death Valley for example, are already being damaged by smog originating in the Los Angeles basin. It seems to me that to allow any further deterioration of the visibility in areas such as these not only would further detract from the experience of visiting the monument, but would make its continued preservation almost meaningless.

When all of the land areas managed by the National Park Service as natural areas are lumped together, and these include not only the national parks, wilderness areas, and monuments we are discussing here today, but national seashores and lakeshores, and national preserves as well, we find that they comprise less than 1 percent of the total land area of the United States. In many cases these natural areas offer the best and only opportunity to preserve the variety of ecosystems and scenic views present in this country before the onslaught of the industrial age.

The "Index of the National Park System" lists 81 national monuments. This amendment seeks to protect only 19 of them, covering a total of 9,565,369 acres.

S. 3219, in its present form with national monuments classified as class II will permit deterioration of air quality in these areas. Under the committee proposal these areas can be upgraded to class I only with the approval of both the State and Federal Governments. This places a significant roadblock in the way of any effort to upgrade monuments to class I protection. The State and Federal Governments would hold veto power over the other's efforts to protect these natural areas.

Again referring back to the role of the National Park System as mandated by the Congress in 1916, it has traditionally been the assumption in the past that these national lands were to be preserved in their natural state; and that the natural attractions to be found in these areas, whether they be parks, wilderness areas or monuments, were

to be protected from any immediate damage to the surrounding environment which would have an adverse effect on the experience to be enjoyed by visitors to the area. I submit to my colleagues in the Senate that, given this assumption, should it be determined that it is in the national or local interest to allow a certain area to deteriorate, the burden of proof should be placed on those advocating degradation, and not on those who seek to protect the area. As we have already witnessed in many other areas around the country, once an area has lost its pristine air quality, it is difficult, if not impossible, to restore it to its original state.

I urge my colleagues to give serious consideration to adding national monuments to the list of areas to be preserved as class I from the outset. Let us not lose this opportunity to protect a handful of areas which are so valuable to us in terms of their recreational opportunity, historical significance, and natural beauty.

Mr. GARY HART. As cosponsor of this very important amendment, I wish to say publicly that I add my support to the excellent statement he has made.

The Clean Air Act amendments reported by the Senate Public Works Committee include a no-significant deterioration proposal which provides a basically sound footing upon which to build an environmental policy to protect areas of the country where air quality currently is better than existing national standards.

In part, the committee proposal would divide clean air regions into two categories, class I or class II, in which certain "increments" of additional sulfur oxide and particulate emissions would be allowed. In conjunction with this, nitrogen oxides, hydrocarbons, and other pollutants would be studied and increment levels will be proposed later by the Environmental Protection Agency. Major new plants which would affect air quality in these clean air regions would have to use best available control technology for limiting emissions.

According to the committee proposal, all international parks, regardless of size, and each national park, wilderness area, and memorial park exceeding 5,000 acres which exist on the date of enactment would be designated as class I areas. Additional pollution increments allowed in these areas would be smaller than in the less restrictive class II regions.

In addition, the committee proposed that those national parks and wilderness areas established after enactment initially be designated class I, but may be redesignated class II with the concurrence of the State and the Federal Land Manager.

Finally, the land classification section of the committee bill also provides that all other lands, including other Federal lands, initially would be designated as class II areas. It is further provided that these "provisional class II areas" may be redesignated class I by the State, with the concurrence of the Federal Land Manager where Federal lands are involved.

However, the committee's provision for protecting air quality over certain Federal lands included in the National Park System should be strengthened.

For this reason, I support the amendment offered by the Senator from Oregon (Mr. Hatfield) to modify the proposed classification

procedures for certain Federal lands originally set aside to preserve their natural state.

This amendment provides that national monuments which exceed 10,000 acres in size and which previously have been set aside as natural areas also be designated class I areas. These areas could be reclassified if State and Federal Governments agree to redesignate as class II.

The committee proposal does just the opposite. It designates these areas as class II unless both the State and Federal Governments agree to redesignate them as class I.

This amendment will help preserve a total of 19 national monuments in 11 States. I ask that it be printed in the Record.

*National monuments over 10,000 acres and managed as natural areas*

Alaska:	(Acreage)
Glacier Bay-----	2, 805, 269
Katmai -----	2, 792, 137
Arizona:	
Chiricahua -----	10, 648
Organ Pipe Cactus-----	330, 690
Saguaro -----	79, 988
California:	
Channel Islands-----	18, 384
Death Valley (Nevada)-----	2, 067, 966
Joshua Tree-----	559, 947
Lava Beds-----	46, 500
Pinnacles -----	14, 497
Colorado:	
Black Canyon of the Gunnison-----	13, 672
Colorado -----	17, 668
Dinosaur (Utah)-----	211, 050
Great Sand Dunes-----	36, 666
Florida: Biscayne-----	103, 701
Idaho: Craters of the Moon-----	53, 545
Nevada: Death Valley (California)-----	2, 067, 966
New Mexico: White Sands-----	145, 334
Oregon: John Day Fossil Beds-----	14, 405
South Dakota: Badlands-----	243, 302
Utah: Dinosaur (Colorado)-----	211, 050

Mr. GARY HART. Many areas of this country previously were set aside as national treasures. National parks, national wilderness areas, national monuments and recreational areas, and wild and scenic rivers are examples of such areas. Their creation evidences a national decision to preserve certain lands in their natural state for all future generations to enjoy.

The National Park System of the United States now includes nearly 300 areas covering some 31 million acres in 49 States, the District of Columbia, Puerto Rico, and the Virgin Islands. The diversity of these areas is reflected in the variety of titles given to them. These include such designations as national park, national preserve, national monument, national memorial, national historic site, national seashore and national battlefield park.

Although some titles are self-explanatory, others have been used in many different ways. For example, the title "national monument" has been given to natural area reservations, historic military fortifications, prehistoric ruins, fossil sites, and to the Statute of Liberty. However, these are all areas of such national significance as to have justified special recognition and protection by various acts of Congress.

A brief historical review will help distinguish between various types of areas now administered by the National Parks Service. On March 1, 1872, Congress established Yellowstone National Park in the territories of Montana and Wyoming "as a public park or pleasuring ground for the benefit and enjoyment of the people" and placed it "under exclusive control of the Secretary of the Interior." The founding of Yellowstone National Park began a worldwide national park movement. Today more than 100 nations contain some 1,200 national parks or equivalent preserves.

In the years following the establishment of Yellowstone, the United States authorized additional national parks and monuments, most of them carved from the Federal lands of the West. But no single agency provided unified management of the varied Federal parklands. The national parks and some national monuments were administered by the Department of the Interior, while other monuments and natural and historical areas were administered as separate units by the War Department and the Forest Service of the Department of Agriculture.

In an act signed on August 25, 1916, Congress established in the Department of the Interior the National Park Service to provide cohesive administration of such areas under the Department's jurisdiction.

The act says:

The service thus established shall promote and regulate the use of the Federal areas known as national parks, monuments and reservations . . . by such means and measures as conform to the fundamental purpose of the said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

A Presidential Executive order in 1933 transferred 63 national monuments and military sites from the Forest Service and the War Department to the National Park Service. This action was a major step in the development of today's truly national system of parks—a system that covers all regions of the Nation and includes areas of historical as well as scenic importance.

In 1964, the areas of the National Park System were classified into natural, historical, and recreational categories for administrative convenience and to clarify park purposes for the public.

Congress declared in the General Authorities Act of 1970 that the National Park System "began with the establishment of Yellowstone National Park in 1872—and that it is the purpose of this act to include all such (natural, historical, and recreational) areas in the system."

With respect to classification as a natural area within the National Park System, a region must be an expanse or feature of land or water of such scenic and scientific value and quality as to be worthy of preservation as a national park, national monument, or national preserve.

Natural areas contain one or more distinctive attributes such as forest, grassland, tundra, desert, estuary, or river systems. They may contain "windows" on the past for a view of geological history, imposing landforms such as mountains, mesas, thermal areas, and caverns, and they may be habitats of abundant or rare wildlife and plantlife.

Generally, a national park covers a large area. It contains a variety of resources and encompasses sufficient land or water to insure adequate protection of the resources. Chosen primarily for scenic and scientific values, all the national parks but one are natural areas. The exception is

Mesa Verde National Park in Colorado, which is classified as a historical area.

A national monument is intended to preserve at least one nationally significant resource. It is usually smaller than a national park and lacks its diversity of attractions.

In 1974, Big Cypress and Big Thicket were authorized as the first national preserves. This is a new category of natural areas established primarily for the protection of certain resources. Activities such as hunting and fishing or the extraction of minerals and fuels may be permitted if they do not jeopardize the natural values.

There is no question but that an effective no-significant deterioration policy should protect areas that have been set aside to preserve their natural state. The committee's procedure for classifying many categories of such Federal lands—national monuments, national recreation areas, wild and scenic rivers, national forests—will allow and encourage deterioration of air quality in these areas and is antithetical to the concept of nondegradation. Under the committee's proposal, all of these lands, regardless of whether they have been set aside to preserve their natural state, are initially designated class II areas, allowing substantial development and deterioration of air quality.

Under the committee's proposal, these areas can be upgraded to class I protection status only if both the State and Federal Government agree on redesignation. By requiring joint agreement for upgrading the protection statutes, the committee places a cumbersome administrative impediment in the way of preservation of these natural values. In effect, the State and Federal Governments each have a veto power over the other's efforts to protect those national areas. This procedure is inconsistent with the basic concept of preventing significant deterioration. The initial presumption in the past has been that natural areas should be preserved. If national and local interest indicate an area should be allowed to deteriorate, the burden should rest on those advocating degradation of air quality, not on those attempting to save natural areas.

The committee's amendments need to be strengthened to provide for increased Federal control of air quality over these areas. This can be done without involving the Federal Government in local landuse decisions on surrounding non-Federal lands.

In addition, our national commitment to preserve certain Federal lands will be better served if those large national monuments which were established or are managed to preserve their natural state are initially given the protection of class I status. Federal and local authorities can then determine if it is in the public interest, both locally and nationally, to reclassify these areas and permit further deterioration of air quality.

Mr. DOMENICI. I call the attention of the Senators to this map so we can get a little perspective. You see this red dot right here in the State of New Mexico; that is 145,000 acres. That is White Sands National Monument. That is the place that has the White Sands missile range, the United States major inland missile range. That is a place that has a monument in the middle that our distinguished President, Theodore Roosevelt, visited. He saw that beautiful white sand out there and came back and, by Executive order, said, "We ought to preserve this."

We are going to preserve that. It is a national monument. The issue is, is it like a wilderness That is, is it like a national park?

The committee, decided on a very basic and simple premise for this part of the bill. It was twofold: One, that the U.S. Government had a role in mandating class I areas; and two, that the States and the Federal Government ought to cooperate with reference to other lands in this Nation that deserve to be upgraded to class I.

So the committee decided that there were two kinds of land over which the Federal Government had jurisdiction that were substantially homogeneous with reference to their total use. They were the wilderness areas and the national parks.

The reason I point out White Sands, is that the disparity in the kind of thing we are protecting in the national monuments is depicted by the difference between White Sands and some of these other national monuments, the latter being very much like a wilderness or very much like a national park. White Sands is at the other end of the spectrum, yet is a national monument. What we decided in our committee was that we should mandate as class I those two kinds of areas, national parks and wilderness areas, that are similar and that we wanted to dictate the pristine protection of.

I do not want anyone to think that we left all the others out, because, as I heard the Senator from Oregon observe, they may be upgraded to class I.

We could easily have included in class I a whole range of areas. We did not do that. We said that there are two types of areas, substantially the same in their purpose, their use and in that which is to be protected. Then we said the Federal land manager and the States can get together and put in any other Federal land, and then we said the States can put any additional areas they want in; that is their business.

So I will say right here that I would be surprised if within 2 or 3 years the respective States do not include as class I a State park that is far more pristine and deserving of a class I designation than White Sands Missile Range or, perhaps, some of these national monuments. That will be an affirmative act on their part just as it would be an affirmative act in New Mexico if they wanted to upgrade White Sands into a class I.

I might say the distinguished Senator from Oregon has eliminated one of the concerns we might have because he has indicated that the Federal land manager of these 19 monuments apparently has already given his consent to putting them in class I. So we do not have any of the concern that we had in the committee that maybe the Federal land manager may be a stumbling block to a cooperative approach with the States. Apparently if the States see fit, they have already got the national parks director cooperating to move these areas up into class I.

The theory of this bill is that we have set in motion an umbrella approach: a minimal Federal involvement with maximum State flexibility. We have built several ingredients into this act that make this workable, the principal one being state discretion.

In addition, there is the best available technology requirements under the State permit system, and our automatic class I's.

With respect to this portion of the bill we have set a cooperative measure in motion for the Federal land manager and the States to take any of the lands they think ought to move up from class II into class I. This gives the State the kind of flexibility it needs in working

with Federal lands and with their own lands to have an orderly protective mechanism for the truly pristine areas in our Nation.

I do not think it is fair to say if we do not have class I for some of these national monuments that we are going to permit them to be degraded such that their principal purpose will not be served. I do not think that is a proper statement.

I will take just my State, for example. No one can tell me that we must designate as class I White Sands National Monument, 145,000 acres of white sand in the desert, and that unless we make it class I rather than class II that we are going to diminish its beauty and basic qualities as a national monument. If someone finds that it appears so they have a way to move it up to class I in due course.

I would ask my fellow Senators to consider two things: One, that we have already told the Members of this body as we proceeded through the debate on this bill to this point what this bill entails. We have given them some idea of the impact of this bill on their States. We told them the basic format for our bill. I do not think it would be right at this point to go in and impose 19 more of these class I areas that the Senator from Oregon would like us to mandate. I think it would be far better to tell them those areas will be protected; they are protected, and if someone wants to move them into class I, that it is not going to be difficult to do.

Second, I think our scheme is the more logical. We took those that are most homogeneous, the wildernesses and the national parks, and we said they will be protected if they are over 5,000 acres.

I think all others have heterogeneous qualities about them. It would appear a betrayal of the concept if we began to add one of a shopping list that might appear very logical in terms of looking at one or two of them. We could as readily add the wild rivers, or we might add State parks of over so many acres. Those are all shopping lists that should be in due course considered on a case by case basis under our bill, and upgraded under the cooperative working arrangement between the Federal Government, the States. And where it is solely State land, on the basis of hearings and input at the State level, the State can unilaterally upgrade its own lands.

Mr. HATFIELD. I do not think we should let the White Sands of New Mexico be thrown up here to confuse or to distort the problems we are facing here.

We ought to keep very clearly in mind just exactly what the national monument is as created by law and administered under this same law by the National Park Service, and that is simply this: The national monument and the national park and the wilderness areas are managed on the same criteria, after all, not only protecting the pristine values, the esthetic values, the land, but the air, and to draw this distinction today is not really being accurate because, a national park and a national monument may only be differentiated by a technicality or by some accident of history. A national monument may be a national monument because the political delegation to the Congress did not designate a national park when they introduced the legislation or it was, if enacted, or adopted by Executive order, a national monument because a President cannot by Executive order create a national park.

In other words, when you look at the administrative criteria, the administrative record, the administrative history and the legislative history, you will find that the National Park Service does not make that kind of distinction.

I would like to ask the committee or a member of the committee just exactly what is the definition of "homogeneous." There are no homogeneous criteria in the national park or the national monument or the national wilderness areas. This seems to be a new criteria of what constitutes the basis of protection. It certainly is not in the law nor is it in the administrative history.

I feel, therefore, when we looked at these national monuments, they are not in the kind of distinct category as it relates to these elements I have discussed, history, administrative order and the criteria of organizing them in the first instance.

If the White Sands Monument in New Mexico would present a problem to Senator Domenici, I suggest that the same right exists, if you adopt this amendment, and that is the State of New Mexico can seek to downgrade this classification in order to maintain the status quo, if that is what the Senator from New Mexico is concerned about.

I think though, as I indicated earlier, that the burden of action should be placed upon those who seek not to protect the ambient air quality that we should have in these areas rather than upon those of us who are attempting to protect them from the beginning.

If the Governor of New Mexico and the government agencies that are responsible in New Mexico to make these judgments wished to have this exempt from the application of this committee bill, under my amendment, if it is adopted, they can seek redress, and with the support of the Federal Government they can seek and acquire this same exemption we are talking about instead of having to do it through the impediments and the obstacles of those who would increase air pollution before we take action.

I think it is very fair to say if we fail to take action today we are subjecting these national monuments to continued deterioration of air, which already exists in the areas of many of these monuments.

I would say to the Senator from New Mexico I think his concern is legitimate. I think it could be answered and could be handled very easily even with the adoption of this amendment if he wants to see the White Sands of New Mexico exempted from the class I classification.

I do feel that this Senate has taken the initiative, has shown the courage, the pioneering spirit, to introduce this kind of legislation.

All I am seeking today to do is to make it complete and not to leave the job half done.

In order to do it completely, we must include the national monuments along with the national parks and the wilderness areas because they are all administered under the Park Service, under the basic criteria protecting the land and the air quality.

Mr. McCURE. Mr. President, I reluctantly oppose this amendment by my good friend from Oregon. We discussed a very similar amendment in the committee, and it was defeated after a great deal of discussion.

It was felt by the committee that national parks and wilderness areas deserve mandatory class I designation and that the decision on na-

tional monuments should be made on a case-by-case basis by the State and the Federal land manager.

We went one step further than that. We said that in the class I areas, the decision relating to the effects of activities outside those areas should involve a relationship to the air quality-related values for which that area was designated a national park or a national wilderness.

Our colleague from Tennessee has upon a number of occasions pointed out the nature of the Great Smokies. Although they are part of the national park system, by their very name, the elements of smoke in the air would, by itself, be contrary to the very nature of the area when that area was created.

So we recognized that even national parks, in their special designation, have some exceptions to the rule. We wrote in for that very reason that the test had to consider the impact upon the air quality related values for which that area was designated.

Let me say further that some of the monuments listed on the information sheet, which I understand the Senator from Oregon has prepared, are already receiving protection under the bill because they include designated wilderness areas. Under the bill, they receive that protection because they have the wilderness designation.

I would like, for myself at least, to add one other further distinction. While the Park Service may administer on the basis that a monument and a park are exactly the same, as a matter of congressional policy they are not exactly the same.

The mandate for the protection granted any national park is different by statute from that which is granted to a national monument.

The national park is the entire broad range of everything that exists there: The land, the water, the plants, animals, air, all for the use and enjoyment of the public.

A national monument is a more narrowly designated area, for the preservation of a unique feature within that area. It may be geologic, it may be historic, it may be man-made, it may be any one of a variety of different things, but it is a much more narrow designation than that of a national park.

It was not our desire to say as a committee that a national monument should not be protected, that the air over a national monument should not be protected.

MR. HATFIELD. Would the Senator agree that we are really getting into now some other gray area for the reason that a grant like this, a national park, namely, Crater Lake, has a unique feature to be preserved?

Therefore, to try to draw this distinction as between a park and monument leads into the sticky wicket because, will not the Senator also recognize, some of these national parks today were originally national monuments, and that it is, really, almost by legislative or political accident or whim as to whether it is a park or a monument?

MR. McCLURE. I would not agree on that at all. The very illustration he has used, I believe, proves my point. The fact that some were monuments and later created parks indicates a desire on the part of Congress to change the designation.

There has to be a reason for that. And the reason is the national park is a much broader mandate for a different kind of management for different purposes than the monument embraces.

Second, the monument can be created by a stroke of an Executive's pen, while the park cannot be. It has to be by statute.

Mr. HATFIELD. Also, a national park has higher prestige and it is easier for Chambers of Commerce to promote generally than national monuments.

Mr. McCLURE. I suspect that is true, and that is getting embroiled in the discussion in my State now, whether we want to change a national recreation area to a national park.

Mr. HATFIELD. The Senator is quite correct, I believe, in saying there is something very unique about a national monument that we want to preserve. But we have a unique character as a criteria of the national park, as well.

Most national parks have a similarly unique dramatic kind of quality or character that we want to preserve: Crater Lake, Glacier, Zion, Yosemite.

Mr. McCLURE. Certainly, because they have within them a unique feature, does not disqualify them as a park.

Mr. HATFIELD. That is the real reason we set them up as a park.

Mr. McCLURE. They have unique values, but that would be a singular feature. But a unique value that Congress has determined should be protected for the interpretation, use, and enjoyment of the public.

Mr. HATFIELD. And a monument also has a unique value.

Mr. McCLURE. It has a very singular, unique value for which it was created.

We should not attempt now, by indirection, to convert the mandate of the creation of a monument into exactly the same thing as a park.

Mr. HATFIELD. I do not believe we are doing that because we are already administering those areas with similar unique characteristics for the public enjoyment.

Mr. McCLURE. The amendment says at the end:

Was established or is managed to preserve natural areas.

I assume the Senator means planning pursuant to a congressional directive or a legislative directive. In other words, the administrator of a public land area could not change the management by administrative direction and, therefore, invoke the provisions of this amendment.

Mr. HATFIELD. The idea is not to have new administrative responsibilities indirectly to set up a national park out of a national monument but, rather, to apply the air quality concerned to the national monument as we are doing in the bill for the national park, the wilderness, international parks, parks in the whole administrative machinery.

Mr. McCLURE. I understand that. I am concerned that the language might lead to an administrative change in fundamental purpose.

Mr. HATFIELD. I believe the legislative record here today could very well clarify that question.

Mr. McCLURE. It is not the Senator's intention to allow that to happen. Whatever the management to preserve natural areas might be, that would have to be pursuant to the statute under which they operate?

Mr. HATFIELD. That is correct. All we are seeking to do, is to extend this outstanding piece of legislation, to include the national monuments.

Mr. McCLURE. I understand the thrust of the Senator's amendment. As I indicated earlier, we tried to confront that question. We decided

the best way to do it was not the blanket approach, which the Senator seeks, but the more restrictive approach which the committee had taken.

Mr. HATFIELD. I would like to clarify something, if I may.

We are not seeking to use a blanket approach to this whole question of the national monuments. I believe there is a total of 81 national monuments. They are of two basic categories, historical and natural. We are only seeking to attach the natural, and a limited number of those. In other words, 19. We have set the limitation at 10,000 acres or more which, in itself, is a selective and, I think, a considered approach rather than a blanket, across-the-board approach to the whole issue of national monuments.

There are some in population centers which would be ridiculous to try to include. That is why we have carefully excluded the historical ones and scientific ones and only included the large natural ones which, in reality, are being administered almost as national parks, because of their unique character. They are similar to the national parks. That is the selectivity we used, rather than the blanket approach. What the Senator from Oregon has done is he has taken a definition of natural or historic, or at least that is how they are designated, and he has chosen natural because that cuts the number down. It is 19, as he had indicated.

Mr. DOMENICI. I assume that one might think the word "natural" would mean it ought to be more logical to protect it, like a wilderness or natural park, than one which was historic. Historic might mean any kind of thing, other than natural. It might be the Bandolier Monument in New Mexico, where they are protecting the cliff dwellings which are historic.

To give the Senator an example of why I think his approach is not correct, and to take these 19 rather than the committee's approach, I would compare Bandolier and White Sands. I did not use White Sands because I don't want any sympathy here, but based on the Senator's argument today, he should have the Bandolier National Monument in the State of New Mexico in his amendment instead of White Sands. He did not do that because one is historic and one is natural.

As a matter of fact, the historic one, the Bandolier, is historic because of the cliff dwellings and the land around it is a scenic wonder. It is almost like a wilderness area.

So what we are saying is there is such a difference between these monuments, and that the designation natural or historic does give us an adequate clue as to what ought to be class I, and even within the natural category there is a significant difference. Perhaps the word homogenous is not correct. I submit that by just carving out a few of the natural monuments and saying to us that those 19 deserve it leads one to conclude, why not all of them? Why not some of the historic ones? That leads me to the conclusion that we were right in our analysis that we should look at them separately with the Federal and State lands managers, consistent with the theory of the bill.

I think it is very clear that a historic natural monument has a distinction to that of a national monument. That has been pretty well followed throughout the history of our National Park Service by the Congress and the President.

To take the two that the Senator illustrates in New Mexico, they had a living society, or they have a distinction there with Bandolier as compared with White Sands.

The national monuments that we include are very similar if not a duplicate of any of the national parks, which are exclusively administered by the Federal Government and under Federal control in such a way that we are not having to accommodate to societies or corporate structures within the monument.

A national monument can include a historic house in the middle of New York City. That is why we did not include historical monuments in this particular amendment. We want to get out to the very areas to which the committee has blazed the trail. Those are the national parks, the wilderness. That is why we have restricted this to those monuments which are most similar to the parks and to the wilderness areas.

If the Senator from New Mexico wishes to have the Bandolier Monument included in class I, his committee proposal is such that it can be raised to that level by the State of New Mexico in conjunction with the Federal agency.

But I think conversely we can do the same with the national monuments. Let us not put the burden upon those who are going to stand apart from the continued deterioration of that air until it reaches such a level of public outcry or wait until the citizens protest so loudly that the States take action. Let us take action now. Then if the State wants to exclude itself from one of those designations, the committee has provided a procedure by which the State could exclude or except its national monument.

Mr. BUCKLEY. I would like to make a couple of comments.

I would like to thank my colleagues from New Mexico and Idaho for a very clear statement of the committee position. We have pored over these points and we believe we have a mechanism that will work, that will enable men and women of good will to achieve the necessary state of perfection.

I did want to correct the record on the last statement of the Senator from Oregon.

I believe the protection provided by class II is such that we will not have dirty air, which will create outcries as suggested by the Senator from Oregon. As a matter of fact, we were told yesterday that class II was a no-growth policy and allowed no development whatsoever. So I really believe we are talking about minor losses here and that the approach of the committee is a responsible one.

Mr. HATFIELD. I ask for the yeas and nays.

The yeas and nays were ordered.

Mr. GRIFFIN. I announce that, if present and voting, the Senator from Tennessee (Mr. Baker) would vote "nay."

The result was yeas 26, nays 65, as follows:

[Rollcall Vote No. 467 Leg.]

# YEAS—26

Abourezk  
Bayh  
Brooke  
Bumpers  
Case  
Clark  
Cranston  
Culver  
Durkin

Gravel  
Hart, Gary  
Haskell  
Hatfield  
Humphrey  
Kennedy  
Mansfield  
Mathias  
Metcalf

Nelson  
Packwood  
Pastore  
Proxmire  
Ribicoff  
Scott, Hugh  
Tunney  
Weicker

## NAYS—65

Allen	Glenn	Moss
Bartlett	Goldwater	Muskie
Bellmon	Griffin	Nunn
Bentsen	Hansen	Pearson
Biden	Hathaway	Pell
Brock	Helms	Percy
Buckley	Hollings	Randolph
Burdick	Hruska	Roth
Byrd, Harry F., Jr.	Iuddleston	Scott, William L.
Byrd, Robert C.	Jackson	Sparkman
Cannon	Javits	Stafford
Chiles	Johnston	Stennis
Church	Laxalt	Stevens
Curtis	Leahy	Stevenson
Dole	Long	Stone
Domenici	Magnuson	Taft
Eagleton	McClellan	Talmadge
Eastland	McClure	Thurmond
Fannin	McGee	Tower
Fong	McIntyre	Williams
Ford	Montoya	Young
Garn	Morgan	

## NOT VOTING—9

Baker	Hartke	Mondale
Beall	Inouye	Schweiker
Hart, Philip A.	McGovern	Symington

So Mr. Gary Hart's amendment (No. 1610) was rejected.

The PRESIDING OFFICER. The Senate will now proceed to vote on the amendment of the Senator from Oregon (Mr. Hatfield). On this question the yeas and nays have been ordered.

MR. GRIFFIN. I announce that, if present and voting, the Senator from Tennessee (Mr. Baker) would vote "nay."

The result was yeas 35, nays 56, as follows:

## [Rollcall Vote No. 468 Leg.]

## YEAS—35

Abourezk	Hatfield	Nelson
Biden	Humphrey	Packwood
Brooke	Jackson	Pastore
Bumpers	Javits	Pell
Case	Kennedy	Proxmire
Church	Leahy	Ribicoff
Clark	Magnuson	Scott, Hugh
Cranston	Mansfield	Taft
Culver	Mathias	Tunney
Durkin	McClellan	Weicker
Hart, Gary	McIntyre	Williams
Haskell	Metcalf	

## NAYS—56

Allen	Burdick	Domenici
Bartlett	Byrd, Harry F., Jr.	Eagleton
Bayh	Byrd, Robert C.	Eastland
Bellmon	Cannon	Fannin
Bentsen	Chiles	Fong
Brock	Curtis	Ford
Buckley	Dole	Garn

Glenn	Long	Scott, William L.
Goldwater	McClure	Sparkman
Gravel	McGee	Stafford
Griffin	Montoya	Stennis
Hansen	Morgan	Stevens
Hathaway	Moss	Stevenson
Helms	Muskie	Stone
Hollings	Nunn	Talmadge
Hruska	Pearson	Thurmond
Huddleston	Percy	Tower
Johnston	Randolph	Young
Laxalt	Roth	

## NOT VOTING—9

Baker	Hartke	Mondale
Beall	Inouye	Schweiker
Hart, Philip A.	McGovern	Symington

So Mr. Hatfield's amendment was rejected.

The Senator from Alaska (Mr. Stevens), for himself and Mr. Gravel, proposes unprinted amendment No. 301.

The amendment is as follows:

On page 11 delete lines 23 through 25.

On page 12 delete lines 1 through 3.

On page 12, line 4, delete the numeral "iii" and insert in lieu thereof the numeral "ii".

On page 12 insert between lines 8 and 9:

"(B) Each national park and national wilderness area or any part thereof, which exceeds five thousand acres in size, established after the enactment of the Clean Air Amendments of 1973, shall be classified as either Class I or Class II by the Congress in the designating legislation for such national park or wilderness area."

On page 12, line 9, delete the letter "B" and insert in lieu thereof "C".

Mr. STEVENS. The "significant deterioration" provisions of the proposed clean air amendments could make it extraordinarily difficult if not impossible to develop and transport oil and natural gas and other energy resources from presently untapped and enormous reserves in Alaska. Such projects as the gasline from Alaska's North Slope, irrespective of the route chosen, could be substantially impeded because of support facilities. That is, gravel pits, electrical powerplants, needed to build and maintain life support in Arctic and sub-Arctic conditions for construction workers and their dependents could not be built. I submit an amendment which will correct this situation by allowing Congress to decide whether a new national park or wilderness area or any part thereof should be designated as class I or class II.

The existing national parks and wilderness areas which would be classified as class I at the date of enactment of this legislation should it become law, probably will not substantially hamper oil and natural gas development. However, sometime during the next Congress we will consider the disposition of the so-called d-2 lands in Alaska. As a result of the passage of the Alaska Native Claims Settlement Act, 83 million acres of Alaska's land has been set aside and proposed for inclusion in the four national land systems—the National Park System, the National Forest System, the National Wildlife Refuges, and the National Wild and Scenic River System. The administration has proposed 83 million acres as additions to those systems. Other groups have proposed over 100 million acres for inclusion. Virtually all these

lands would be studied for designation as wilderness and many acres would be eminently suitable for wilderness designation. Under the present language of this bill, all those lands would become class I lands.

The effect on the Nation's future would be staggering. Alaska has estimated reserves of 76.1 billion barrels of oil, 439 billion cubic feet of gas, and hundreds of billions of tons of coal.

Under the existing provisions of this act, an unknown but great amount of those resources may be unavailable for national use. Since class I land managers can prohibit activity in the areas outside their boundaries which might degrade the air quality over the Federal area, it may be impossible to construct access roads, mines, generating systems, petrochemical plants, railroads, communities, and the variety of other projects which will be needed to allow America to use the resources of her largest State. In this time of diminishing supplies of energy when we are dangerously dependent on foreign sources, the United States can ill afford such a drastic limitation on the development of its resources. Alaska is the last large Federal land holding that we have and it is from Alaska that most new national parks and wilderness areas will be created. But it is also from Alaska that our energy needs of the future will be met.

Another important factor to be considered is the effect this act could have on the lands the Alaskan Natives are receiving under the Alaska Native Claims Settlement Act. The creation of enormous new parks, wilderness areas, wildlife refuges, and national forests with new land managers having authority as they would under the bill, to control development over vast areas, would severely limit the Natives rights to use their own land. It would be most unfortunate if we left it up to Federal and State land managers to determine what Congress intended when we passed the Claims Act. Congress should have the final say about what lands are in which class to protect the rights of Alaska's Natives as well as to insure the proper balance between environmental protection and resource development.

My amendment would allow Congress to decide whether future parks and wilderness areas or parts thereof should be designated as class I or class II. It should be the responsibility of Congress to balance the national objective of maintaining our beautiful wilderness areas against the pressing need to develop domestic sources of energy. I hope that each Member of the Senate understands that I love the wilderness areas of my State. Alaska's natural beauty is what makes her a great State. However, the pressing need for energy independence must be considered when classifying the 83 million acres in my State which may be withdrawn for parks and wilderness areas. I urge support of this amendment which would place the responsibility of classifying new parks and wilderness areas as either class I or class II upon the Congress.

This amendment will provide that Congress, as it creates the new wilderness areas or new national parks, must designate those parks, wilderness areas or portions thereof as class I or class II.

Congress could at this time provide the mechanism which the committee originally intended, namely, that the manager of the Federal area, and the State acting through its designated official, would classify the new park or wilderness area. Under the committee proposal

each time we created a new park or a new wilderness area Congress could determine whether the area would be classified as class I or class II or, in fact, declassify it.

In view of the fact we have proposals to withdraw very large areas in Alaska, we feel that Congress ought to make the determination as to what part of those areas or the whole area, if it wishes to do so, should be class I or class II.

I have discussed this with the chairman of the committee and the manager of the bill, and our staffs have worked together. I have also discussed it with Senator Jackson, as the chairman of the Interior and Insular Affairs Committee.

This seems to us to be the best course to pursue in the future, and I would be grateful to the chairman if he would accept this amendment.

Mr. GRAVEL. I have joined not only as a cosponsor but because of the fact that it was setting up a new category which was very far reaching, and the committee chose not to approve this.

The motivation for that effort was the fact that with the selection or setaside to be made by Congress the impact could be quite horrendous on the State of Alaska, and because it was so important, it should not be left in the hands of lower level bureaucracy. Congress is going to devote a lot of time in the determination in the State of Alaska involving almost 100 million acres, and there is no question in my mind that as the Interior Committee proceeds in determining the use they want to have take place with respect to this land, they will be the most qualified group of individuals, and certainly the highest ranking individuals in our Government to make a determination not only with respect to the land use but with the indirect determinant of land use, that is, the quality of air that the area will have.

So I think this is a very fine compromise, and I am hopeful the committee will accept it. Because it is a compromise that addresses itself particularly to our unique problem, and it is a problem that is a one-shot type of situation that will occur as Congress adjudicates disposal of these lands in the next 2 years. I think the committee can handle it very adequately.

Mr. MUSKIE. With regard to new national parks and wilderness areas created after enactment. I think the committee expects that many of these areas will be classified as class I or II in the enabling legislation. Senator Stevens' amendment simply requires that this expectation become a certainty. Congress will decide. The classification will not be left to the State and Federal land manager.

One advantage of this approach is that the opponents of the creation of new parks and wilderness areas will not be able to argue that the park or wilderness should not be created because an automatic class I designation would accompany that creation.

In accepting the amendment, it is the committee's intention that the presumption be that new parks and wilderness areas would be classified as class I areas, and that only under unusual circumstances would Congress designate the area as class II. The committee intends that during the consideration of creation of these areas, the Federal land manager provide Congress with full information regarding the air quality related values associated with the area so that Congress can make its decision with full knowledge.

I am ready to accept this amendment.

Mr. BUCKLEY. I also want to express my approval of this amendment. While I believe the bill, in its present state, provides sufficient flexibility to meet the problems addressed by the amendment, I see no reason why the bill should not be amended as suggested by the Senator from Alaska. Certainly he has pointed to some of the special problems to be faced by the State.

Also, I understand that environmental groups believe a case-by-case determination, as foreseen in the Stevens amendment, would probably give us a very reasonable and workable framework within which to act in the future.

The Congress will have the full information with respect to the values to be protected and the areas to be set aside in the future.

By accepting the Stevens amendment, we might avoid some of the impediments that might otherwise exist to preserving land.

Mr. McCURE. I want to support the amendment, also, for a variety of reasons that my colleagues on the committee have already set forth.

This is a matter we discussed in the committee. Without some understanding as to the manner in which they would be handled, the automatic class I designation could be a real impediment in the creation of some of the parks that I am sure we would want to create.

I think the procedure set forth in the Senator's amendment is appropriate and I fully support it.

The PRESIDING OFFICER. The question is on agreeing to the amendment of the Senator from Alaska.

The amendment was agreed to.

#### AMENDMENT NO. 2089

Mr. BUMPERS. Mr. President, I call up my amendment No. 2089. The amendment is as follows:

Delete lines 18, 19, and 20 on page 11 and insert the following: "all international parks, and each national wilderness area, and national memorial park which exceeds five thousand acres in size, and each national park which exceeds six thousand acres in size."

Mr. BUMPERS. As everybody knows, the Clean Air Act provided that national parks and wilderness areas that have an acreage over 5,000 acres will be considered class I areas.

I have a problem in my home State, which I am sure the committee did not think about at the time, and that is that the city of Hot Springs, the fourth largest city in my State, has a national park.

It presently has 4,500 acres in it and I mistakenly told the Senator from New York a moment ago it was contemplated an additional 1,500 acres would be acquired. That is not the case.

The case is that it now has 4,500 acres, but the authorization is 5,500 acres.

There is an ambiguity in the bill as to whether or not that authorization would bring Hot Springs under the bill.

My amendment simply raises the level from 5,000 acres to 6,000 acres for national parks alone.

The National Park Service tells me that Hot Springs National Park is the only park that would be affected by that amendment.

But to force a city in my State to be a class I area would absolutely prohibit any such further development in the city.

Mr. MUSKIE. The Bumpers amendment only affects one national park; that is, Hot Springs, Ark. It appears that there is no opposition to adoption of this amendment.

Hot Springs is a unique situation. The park is in the middle of the city. That kind of situation is adequately protected by the class II increment, which will still apply to the area after the adoption of the Bumpers amendment.

The growth of the city of Hot Springs around the park creates a situation very different from parks such as the Grand Canyon, Bryce Canyon, or Glacier National Park. Had the committee known of this situation, we would have accommodated this concern in the reported bill. For that reason, I am willing to accept this amendment.

Mr. BUCKLEY. I believe the existing committee language could be clarified through legislative history as not applying to Hot Springs, because we are talking about parks at the time of passage that exceed 5,000 acres.

Since nothing will change, in my estimation, I certainly will not object to this amendment.

Mr. McCLURE. I will not object to the amendment. I think there is a further protection in the bill. Even though it is in a class I area, the pollution would be considered in relation to the air quality related values for which the park was designated.

There is an administrative means of meeting the problem, but I have no objection to the amendment of the Senator from Arkansas.

Mr. BUMPERS. The members of the committee present here can feel free to handle that in conference, however they choose. If they want to clean up the language, remove the ambiguity, or accept the amendment, either way. But I do want to alleviate the minds of 40 to 50 thousand people who are concerned about this.

The amendment was agreed to.

#### AMENDMENT NO. 2063

Mr. TOWER. Mr. President, I call up my amendment No. 2063. The amendment is as follows:

On page 71, line 20, strike the period after "section" and insert in lieu thereof a comma and the following: "nor shall any such warranty be invalid on the basis of the installation or use of any air-conditioning system not installed in the factory of the vehicle manufacturer, where the particular vehicle or engine in which such air-conditioning system is installed is certified in accordance with section 206(a)(3) with an allowance for air-conditioning or similar equipment to be subsequently installed."

On page 70, line 4, insert "(a)" after "Sec. 26."

On page 70, after line 12, insert the following new subsection:

"(b) Section 206(a) of the Clean Air Act is amended by adding the following new paragraph:

"(3) Each new motor vehicle or new motor vehicle engine shall be certified to conform to the regulations prescribed under section 202 of this Act for the particular vehicle configuration, anticipated use pattern, and equipment of such vehicle or engine. The Administrator shall certify each vehicle or engine with an allowance to assurance conformity with such regulations for air-conditioning or similar equipment to be subsequently installed. Such vehicle or engine shall be deemed to be covered by a certificate of conformity only if no equipment is added or other modification made which is not within the allowance provided for in this paragraph."

The amendment which I have submitted corrects a deficiency in the Clean Air Act which will become apparent once the provisions dealing with performance warranty testing are applied in 1977.

Up to this time the problem has not faced the aftermarket air conditioning industry because these testing provisions of the Clean Air Act have not been applied.

The problem which faces this industry is that because of an ambiguity in the original act, and subsequent regulations promulgated by EPA, there exists the potential for pressure being applied by auto manufacturers on their franchise dealers to purchase and install only those air conditioning units which are manufactured by the automakers.

The law presently seems to allow the voiding of an auto emission warranty by the manufacturer if equipment is added to the car after the car is purchased, if that equipment adversely impacts on the emission control system's efficiency.

In and of itself, this is no cause for concern, and in fact is a highly commendable part of the act.

However, EPA regulations dealing with defects reporting procedures, which were adopted subsequent to the Clean Air Act, complicate the situation, because among those items of equipment covered under these regulations are air conditioning units.

The manufacturers of these aftermarket air conditioning units are concerned that when section 207 of the act goes into effect, it will be possible for the automakers to exert pressure on their franchise dealers—who now buy some 2 million of these aftermarket units each year—not to purchase and install these units lest they lose the warranty protection on the automobile's emission control system.

The air conditioning market itself is highly competitive, and it is a constant struggle for the aftermarket manufacturers to succeed against the enormous advantages of the automakers, who of course would like to build, sell, and install every air conditioning unit in the country.

I do not believe it is wise to leave the door open on the potential for abusing the law in a way that destroys this competition, particularly since there is no foundation to the argument that an air conditioning unit of any type could in and of itself cause an emission system to fail during performance testing.

After this problem was brought to my attention, I had my staff discuss it with EPA, which reported essentially the following:

First, it would be possible for a representative of an automaker to apply pressure on the dealer not to purchase nonfactory built air-conditioners, by misconstruing the regulations covering defects reporting.

Second, there would be no legal basis for such an argument.

And, third, that it would be likely that before a legal test case could be completed, the damage to the aftermarket industry would be irrevocable.

According to EPA, the argument that a performance warranty could be voided by the manufacturer solely for the installation and use of an aftermarket air-conditioner rests on two false assumptions.

One of these assumptions is that aftermarket air-conditioners impact adversely on the emission system, and that factory units do not.

The second fallacy is that the performance test envisioned at this time by EPA would be able to detect the impact of the air-conditioning unit on the emission control system.

The facts, according to EPA, are that the majority of these after market air-conditioning units may possibly be superior to the factory units in terms of the relationship between the operation of the air-conditioner and the operation of the emission control system.

Further, according to EPA, if an engine or automobile is certified and designed for air-conditioning, the impact of the air-conditioning unit has already been calculated and compensated for, whether the unit is built in the factory or not.

I was further advised by EPA that under the performance testing procedures envisioned at this time, which are due to go into effect in 1977, the automobile will be tested without the possibility of detecting the impact of the air-conditioning unit.

The reason is that there are two ways in which an air-conditioning unit can affect the performance of an emission system. There is a power drain on the engine which accompanies the use of the air-conditioner, and there is the weight factor of the unit itself.

However, neither of these two factors are present, according to EPA, under the performance testing procedures to go into effect next year.

In sum, EPA has assured me that the problem does exist, and that it is inequitable to those who manufacture, sell, and service aftermarket air conditioners.

Although the industry had suggested language which they felt would solve the problem, I asked my staff to request drafting assistance from the Public Works Committee, in order to insure that the language would both solve the problem and at the same time avoid creating another.

This is a highly complex law, and the various provisions are interdependent. I wanted to make sure that the solution truly was a solution.

The amendment, I believe, is consistent with the intent of the Clean Air Act, and enhances the performance testing provisions.

It is my understanding that the managers of the bill will accept my amendment. I appreciate their consideration, on behalf of the some 15,000 Texans who depend on this aftermarket air conditioning industry for jobs and the millions of consumers who profit by the presence of healthy competition in the industry.

Mr. MUSKIE. I am pleased to accept the amendment of the Senator from Texas (Mr. Tower).

His amendment allows the installation of air conditioners on automobiles without jeopardizing either the performance or the defects warranty of the existing law, if that model car has previously been certified by EPA with an allowance for the addition of such air-conditioning equipment.

This amendment is an improvement in the EPA certification procedure. Under current practice, air conditioners can be installed after the sale of new automobiles without the addition of such power equipment being taken into account in the certification procedure. The likely result is an increase in the emissions of the car above the levels recorded during the initial testing.

Mr. Tower's amendment would protect the investment of the car owner in emission controls by requiring that the possible installation of air conditioners be taken into account during certification. The

emission performance which the consumer paid for will be safeguarded from a loophole in the current law.

The consumer's warranty is also protected from possible claims of auto manufacturers that the installation of air-conditioners invalidates that warranty. Although it is not the intent of current law that the addition of air-conditioners invalidate the warranty, Mr. Tower's amendment will make this explicit.

Mr. BUCKLEY. I concur with the distinguished chairman of the subcommittee.

It seems to me the amendment that has been submitted is wholly consistent with the one that was submitted last week by the Senator from Tennessee (Mr. Baker), the Senator from Vermont (Mr. Stafford), and myself, and adopted by the Senate.

I believe it clarifies the matter and I urge its acceptance. I would not want the fact that we have accepted the amendment to indicate, by inference, that it was clearly necessary.

I am not certain that it was necessary because it would not necessarily affect the pollution control equipment, and that is the area toward which this bill is directed.

I have no objection to the amendment. But I do not want to fan the flames of fear that run through a lot of people that have equipment that may be added to an automobile that in no way relates to the air pollution systems.

Mr. MUSKIE. I think that is a very proper cautionary note.

The amendment was agreed to.

#### UP AMENDMENT NO. 302

The Senator from Nevada (Mr. Cannon), for himself, Mr. Laxalt and Mr. Fanning, proposes an unprinted amendment No. 302.

The amendment is as follows:

On page 10, between lines 24 and 25, insert the following:

(e) Section 110(a) (2) of the Clean Air Act is further amended by striking out "and" at the end of clause (G), striking out the period at the end of clause (H) and inserting in lieu thereof a semicolon and the word "and", and inserting at the end thereof a new clause as follows:

"(f) It provides for the granting by the State of variances for emission sources: *Provided*, That an application for each such variance is made to the State, and the State determines in accordance with criteria established by the Administrator that—

"(i) such source is a facility for the smelting of nonferrous metals and is in an isolated area will provide control of emissions with a supplementary control system; and

"(ii) complete compliance would cause severe economic hardship on such source."

On page 10, line 25, strike out "(e)" and insert in lieu thereof "(f)".

On page 11, line 6, strike out "(f)" and insert in lieu thereof "(g)". [See Sec. 119]

Mr. CANNON. The amendment I have submitted, with Senator Laxalt and Senator Fanning for the consideration of the Senate provides for the granting of a variance for emission sources in isolated areas and where complete compliance would cause severe economic hardship on such source. The source would have to provide secondary emission controls capable of avoiding any serious impact on the public health or welfare. It provides time and flexibility in those situations which present economic dislocations.

For more than 40 years the copper smelter at McGill, Nev., has been in operation providing a steady supply of copper to the industrial centers of our Nation and contributing in a significant way to the high standard of living we all now enjoy. For 40 years the smelter has provided the sole economic base for most of eastern Nevada, and specifically White Pine county. The fortunes of Ely and McGill, the two principal towns, have risen and fallen in step with the fortunes of the copper industry. When in full production the plant produces some 50,000 tons of copper a year.

Never during the time the plant has been in operation has the purity of the air been unduly annoying. No health hazard to the community or to those working in the plant has ever been documented. Neither has the plant contributed to a diminution of air quality in other areas. The smelter is in a very isolated location. The closest large city is Salt Lake City, Utah, which is some 200 miles distant. The map at the rear of the Chamber illustrates the isolated nature of the facility.

If I can draw the attention of my colleague from Maine to the map, I would like to point out the location of Ely and McGill. The closest town is some 77 miles away and is not as big as the town of Ely. The closest town of any size is Salt Lake City, which is over 190 miles away. Las Vegas is some 240 miles away, Reno is 264 miles away. Elko is 187 miles away, and Wells is 137 miles away. So this area is a completely isolated location.

The residents of Ely and McGill deserve better than to be turned into a new Appalachia. That unhappy possibility is now a reality.

Because there is no flexibility in the present law for less than continuous control systems, the company is faced with the prospect of shutting down the smelter. Earlier this year some 500 mine workers were released and the company has announced another 250 smelter workers will be released by the end of next week, ending the operation for the present. Skilled workers are leaving. Most of the community does not have the wherewithal to relocate as their primary assets—the equity in their homes is being destroyed. The immediate effect of a shutdown will be to boost unemployment to at least 35 percent and later throughout the county to 50 percent, or more.

The effort of our Nation to clean and protect the environment is the result of a very real and growing problem. Our high standard of living pales when our air and water is fouled and our countryside littered with the end products of our industrial might. I welcome and have supported clean air, clean water, and solid waste control bills. It would be a mistake to turn back on these efforts. However, flexibility is necessary to deal with the serious problem now threatening the economic base of this community in Nevada and other similarly threatened communities. I believe a flexible approach is certainly justified where such dire economic dislocations could occur.

Although the supplemental control system at McGill meets national primary air standards and the State air quality requirements, the EPA has insisted on ever more costly constant control equipment which will, if enforced, mean the permanent closing of the facility.

I commend the committee for its effort to deal with this problem. The committee has set nonferrous smelter operations in a somewhat different position from other emission sources and provides that supplementary control systems are approvable pollution control systems

in appropriate circumstances. However, I am not clear that the committee amendment reaches those very facilities most in need of relief.

The bill itself states that "enforceable supplemental emission reduction strategies for existing nonferrous smelters" may be employed. I am concerned that the committee report language may misinterpret what present law requires and close the door on what the bill itself seems to allow. I quote from the committee report on page 17, "The word 'supplementary' means that continuous control technology must be employed as a precondition to using supplementary systems." The report then goes on to say that for older smelters, present practice is to require acid plants and an additional research and development program. It further cites the Ninth Circuit Court decision in *Kennecott Copper Corp. against Russell Train* as authority for that position.

The position the EPA has taken and is apparently supported by the committee report is not supported, in my view, by the law or by the court decision. It appears to deny the element of economic feasibility as a determination of an acceptable emission control strategy.

I quote from the *Kennecott* decision:

(U)nder EPA's view of section 1857c-5(a) (2) (B), (existing sources) need only reduce emissions to the extent necessary to comply with air quality standards. Moreover, existing sources, as opposed to new sources, need adopt only such systems of emission reduction as are economically feasible, so long as interim compliance with air quality standards may be achieved by "other measures."

Here the court was stating its view of what the EPA itself required under its interpretation of the law. Further on in the opinion, the courts states:

As EPA has undertaken to assure *Kennecott* . . . under EPA's interpretation of section 1857c-5(a) (2) (B), EPA could not compel *Kennecott* to install additional emission reductions at McGill unless it were economically feasible to do so.

The court did, indeed, hold that constant control systems were required by law to the extent they are economically feasible. But it did not establish the requirement that a baseline constant control system was a precondition to a consideration of economic feasibility for relief from further constant control technology. I believe it is imperative that the Senate address the question of the extent to which economic feasibility may be asserted. As I have pointed out, the smelter in McGill is very isolated, it is a marginal operation, and claims it cannot justify even an acid plant but has and will continue to meet all air quality standards through use of a supplemental control system employing dispersion techniques and production cutbacks.

The committee bill provides that existing nonferrous smelters may use "enforceable supplemental emission reduction strategies" in addition to any available continuous emission limitations. My first question relates to the procedure by which the decision to permit use of supplemental controls will come about. How would the smelter with which I am concerned obtain permission to use such controls?

Mr. MUSKIE. I would assume that the smelter in question would petition the State for a revision of the implementation plan applicable to it and, if the State approved, a revised emission limitation would be submitted to EPA for approval.

Mr. CANNON. What if the smelter owners decided that any baseline reduction requirement was not feasible?

Mr. MUSKIE. Under current case law which this bill would not change, the challenge to feasibility would occur at the time the emission limit was imposed—in this instance whenever a case could be made on feasibility during consideration of a new control strategy including use of supplemental controls. It is important to note that this is a very specific exception to provide relief for the kind of facilities with which the Senator is concerned. It is narrow in that it is not available to other kinds of industrial activities and it assumes that the smelter can prove that any combination of supplemental controls and other controls will be enforceable and achieve and maintain air quality protective of health on a constant basis.

Mr. CANNON. What does the word “enforceable” mean in the context?

Mr. MUSKIE. The committee addressed that question in the report on page 17, as follows:

The use of the term “enforcement” restricts the use of supplementary systems to those cases where both the Administrator and the State are satisfied as to the reliability and enforceability of a particular system and where the State (or the Administrator) has the resources to oversee such strategies without sole reliance on the source operator’s good faith.

Mr. CANNON. Then I can conclude from what Senator Muskie has said that if a smelter can clearly demonstrate that any continuous controls would cause severe economic hardship—in this case plant closure—and can meet the requirements of the act as regards enforceable supplemental controls—that would be an approvable control strategy under the act?

Mr. MUSKIE. Yes.

Mr. CANNON. I believe it will give us an opportunity to not have this area become a second Appalachia, and based on that assurance on the Record, I will withdraw my amendment.

Mr. McCLURE. I think the point has been very carefully defined, and I have no quarrel with it at all. But I think the further distinction should be made in qualifying this procedure that if a continuous control strategy is used, then intermittent controls would be added to the continuous controls. My understanding is that continuous controls are not applicable in this problem but intermittent control strategies are. That would be the next level of stringency and the next level of exception permitted under this exception of the act.

Mr. CANNON. The reason for the continuous controls to be effective here is initially they had an estimate that an acid plant, for example, of a limited capacity, would cost \$23 million. Now the estimate is up over \$40 million. The plant is not that economically viable. It is a very low margin of operation. If they have to go to continuous control process, such as a \$40 million plant, they cannot afford to operate. They simply have to shut down.

Mr. McCLURE. I wanted to make that further definition simply because plants that do have continuous controls, and add an intermittent control strategy for the period that the continuous controls do not exist, would find it less stringent in application than they would in this particular instance in Ely Nev.

Mr. CANNON. This plant may have to shut down more than some others, although our weather is so open and clear there that normally we do not have the problem of temperature inversion. We have a low level pollution problem.

Mr. MUSKIE. May I add that this problem has been discussed in committee at considerable length. Some of the reasons which the Senator has stated today have been discussed. I hope this discussion will be further useful.

Mr. CANNON. I withdraw my amendment.

Mr. FANNIN. There is one other copper smelter in this country in the same position as the McGill, Nev., smelter and that is the smelter operated by the Phelps Dodge Corp. at Douglas, Ariz. I am advised that all other copper smelters which process sulfide ore and thus have a sulfur oxide problem are installing or have installed so-called positive emission control equipment.

The Douglas smelter was built in 1902 to process ores from the mines at Bisbee, Ariz. The last of the active mines at Bisbee was shut down by Phelps Dodge in June of 1975. Although the Douglas smelter continues to smelt some concentrates from other Phelps Dodge mines and recycles substantial tonnages of copper scrap, no Phelps Dodge mine depends for its continued existence upon the continued operation of the Douglas smelter. It can, however, serve an important function as a custom smelter for Arizona mines which have no smelting facilities of their own.

I am told that the company has spent some \$20 million on air quality control at the Douglas smelter and is currently meeting air quality standards. The economic situation at the Douglas smelter simply will not justify the installation of positive control equipment. It has been estimated that the cost of installing a double contact sulfuric acid plant at the Douglas smelter would be in the neighborhood of \$96 million. However, by the operation of an intermittent control system the smelter can meet ambient air quality standards.

If the Douglas smelter is forced to close, over 600 workers would lose their jobs, the economy of the Douglas, Ariz., area would be crippled and the United States would lose between 5 and 10 percent of its total copper smelting capacity.

As in the case with the McGill smelter in Nevada, we are dealing with a very old facility, the rebuilding of which cannot be economically justified.

Mr. LAXALT. This amendment would authorize the States to approve variances for emission sources to utilize supplementary control systems for purposes of meeting ambient air quality standards. But two conditions would have to be met. The source would have to be in an isolated area where the State could determine that there would be no detrimental impact on public health and a severe, economic hardship must be demonstrated, if continuous controls are required.

Needless to say, I am a strong supporter of this amendment. Not only am I a cosponsor but I have participated actively in many attempts to find remedies for problems caused by EPA's insistence on inflexible emission limitation strategies for stationary sources.

The Kennecott operation in Ely, Nev., is just one example of a source which has been seriously impacted by such inflexible interpretations. As Senator Cannon has noted, the Ely smelter is old, relatively inefficient, and utterly incapable of affording expensive continuous control equipment.

The unemployment rate in White Pine County is now well over 25 percent, placing it first among Nevada counties in this rather dubious category.

What is more, although White Pine is not yet the poorest of Nevada's counties, should the smelter be shut down on a permanent basis, it would soon become so with the result that Ely, in the words of the area manager for the State employment security department, would become "another Nevada ghost town."

Yet, EPA is insisting that continuous controls be applied. Literally thousands of jobs are at stake and owing to the isolation of the area and the ability of the smelter to meet air quality standards through the use of supplementary control systems, there would be no adverse public health impact. But still, EPA insists.

Legislative relief is therefore the only recourse. Accordingly, I am most distressed by the committee argument that emission limitation provisions ought not to be altered. As this argument runs, once the provisions are adjusted, they are subject to continuous erosion. However, in view of the seriousness of the situation in my State and elsewhere, it seems to me that flexibility should actually strengthen the provisions.

Thus, the question is both broad and important. Should the emission limitation provisions of the 1970 Clean Air Act be inflexibly applied regardless of social and economic consequences for a particular area? Or, should the Congress set public policy guidelines sufficiently flexible to prevent the drastically inappropriate application of those provisions with very serious consequences for counties such as White Pine?

#### UP AMENDMENT NO. 303

The Senator from Texas (Mr. Bentsen) proposes an unprinted amendment numbered 303:

Mr. Bentsen's amendment is as follows:

On page 86, line 8, delete "fifteen" and insert "sixteen".

On page 86, line 13, delete "eleven" and insert "twelve".

On page 86, after line 13, add: "Such Commission shall include four State Governors, who may designate the chief administrative officer of the State's air pollution control agency."

On page 86, after line 7, insert: "(7) the extent to which the reduction of hydrocarbon emissions is an adequate or appropriate method to achieve primary standards for photochemical oxidants. Such study shall include—

"(A) a description and analysis of the various pollutants which are commonly referred to as 'photochemical oxidants' or chemical precursors to photochemical oxidants;

"(B) an analysis of any pollutants or combination of pollutants which need to be reduced to achieve any photochemical oxidant standard, and the amount of such reduction;

"(C) the relationship between the reductions of hydrocarbons, oxides of nitrogen, and any other pollutants and the achievement of applicable standards for photochemical oxidants;

"(D) the degree to which background or natural sources and long-range transportation of pollutants contribute to measured ambient levels of photochemical oxidants;

"(E) any other oxidant-related issues which the Commission determines to be appropriate."

On page 87, after line 7, insert the following new paragraph:

"(2) A report on the results of the study and investigation of the Commission authorized under subsection (a) (7) of this section, together with any appropriate recommendations, shall be submitted not later than two years after the date of enactment of this section. During the preparation of this specific study and report, the Commission shall seek the participation and consultation of the Chairman of the Council on Environmental Quality; the Administrator of the National Oceanic and Atmospheric Administration; the Administrator of the Environmental Protection Agency; and Governors of those States having air quality control regions in which primary ambient air quality standards for photo-

chemical oxidants are exceeded at the time of enactment of these amendments or are projected to be exceeded within the period of the study, or the chief administrative officers of their State air pollution control agencies designated by any State Governor. The Commission may contract with nonprofit technical and scientific organizations, including the National Academy of Sciences, for the purpose of developing necessary technical information for the study authorized by subsection (a) (7) of this section. [Sec. 323(a)(7)]

Mr. BENTSEN. This is a revision of the amendment I offered Tuesday of last week calling for a study of the strategies proposed for the control of photochemical oxidants.

I had originally intended that this be a highly technical, sharply focused endeavor, and for that reason I had proposed a special body whose sole purpose would have been to undertake it. I have now assigned the effort to the National Air Quality Commission which S. 3219 will establish, though I believe the text of my amendment sufficiently highlights the importance we assign to this study.

Specifically, my amendment calls upon the Commission—

To analyze and describe the various pollutants commonly referred to as "photochemical oxidants;"

To enumerate those which should be regulated and from which the American people should be protected;

To recommend strategies for their attainment;

To determine what effect the control of hydrocarbons will have on oxidant formation and concentrations; and

To clarify the degree to which background levels of oxidants contribute to those concentrations.

This study is to be completed within 2 years.

My amendment will also expand the public membership of the Commission by 1 member, to 12, and assure that at least 4 of those members are Governors, or directors of their state air pollution control agencies. As I have already emphasized in the debate on this bill, I believe that State and local contribution to this study will be invaluable. And, I am pleased that the States will, as a result of this amendment, play a major role in all of the Commission's efforts.

Mr. MUSKIE. The problem that the Senator's amendment addresses is a very important one, and I think this is a sensible way to approach its study and analysis, and the development of solutions to it. I am happy to accept the amendment. I see no difficulty with it.

Mr. BUCKLEY. I, too, support the amendment that was worked out by the Senator from Texas. Having all of the studies within a single body is important to its effectiveness, and to make sure that we do not have duplications and even contradiction.

I also believe that the specific inclusion of Governors within this body is a very constructive addition to what we had in the committee print.

I would hope that when the President nominates the public members, he would also include professional environmentalists. It seems to me this is also a skilled point of view that ought to be specifically represented on the commission.

Mr. McCURE. I think this whole field of photochemical oxidants does need further study, and this amendment strengthens that thrust, as well as, I believe, strengthening the Commission.

I think one of the dilemmas we find in this area is that every time we try to do something, we cause another problem. Getting the lead

additives out of gasoline has in some cases required the addition of aromatics to the gasoline. The combination of those aromatics has sometimes resulted in the photochemical reactions toward which the Senator's amendment is directed. Every time we gain a little, we lose elsewhere. We need to know as much as we can about that, so I fully support the Senator's amendment.

The PRESIDING OFFICER. The question is on agreeing to the amendment of the Senator from Texas (Mr. Bentsen).

The amendment was agreed to.

#### AMENDMENT NO. 2117

Mr. THURMOND. Mr. President, I call up my amendment No. 2117.

On page 86, strike the period at the end of line 7, insert in lieu thereof a semicolon, and add the following:

(7) alternative strategies for permitting, without impeding the achievement of national ambient air quality standards as expeditiously as possible, the construction of new facilities and the modification of existing facilities in air quality control regions exceeding the national ambient air quality standard for any pollutant regulated under the Act. [Sec. 323(a)(8)(B)]

My amendment is a very simple, straightforward one. It would expand the charter of the National Commission on Air Quality, created under section 37 of this bill, to specifically require a study of the most desirable means of permitting continued economic growth—that is, new industry and expansion of existing industry—in air quality control regions where the national ambient air quality standard for any pollutant regulated under the Clean Air Act is being exceeded. I would like to briefly explain why study of this particular issue, as mandated by my amendment, is needed.

First, under section 110 of the Clean Air Act of 1970, each State is required to adopt a plan which provides for the attainment and maintenance of national ambient air quality standards. This plan must provide adequate authority for a State to prohibit the expansion of any existing facility or the construction of any new plant which might prevent the attainment and/or maintenance of these federally mandated standards.

On its face, this policy may not appear unreasonable, but in the real world, we are rapidly approaching the point where these provisions of current law will amount to a major roadblock to vitally needed economic growth in many parts of the Nation, including urban areas where the problems of unemployment are most severe. Under existing law, if a national ambient air quality standard for any pollutant is being exceeded in an air quality control region after the date by which that standard is to be attained—1977, at the latest—then no further construction or expansion of sources of that pollutant could be permitted in that region.

This literally means, that economic growth—so necessary to provide jobs for our growing population—very soon will come to a standstill in many regions of this Nation, if something is not done to provide some flexibility under the Clean Air Act.

Second, I think the committee has recognized this problem and has, in effect, admitted that we must continue to have a desirable balance between economic growth and environmental cleanup, even in areas which still have major air pollution problems. I have reference to

section 11 of the committee bill and that portion of the committee report, which describe the means by which individual industries in regions with air pollution problems can expand, without worsening those air pollution problems.

I commend the committee, and its chairman, Mr. Randolph, for their initiative in authoring section 11. However, a number of my constituents feel that it does not go far enough in providing the flexibility desired. They have indicated two major criticisms of the committee approach. First, section 11 pertains only to the expansion of facilities already situated in an air quality control region. It does nothing to help new industry—even very clean industry—locate in an area that exceeds the ambient air standards.

A second major deficiency in section 11 is that it apparently favors older, heavier-polluting industry, which has the capability of installing better pollution control technology and reducing the pollution level from existing sources enough to allow plant expansion with no net increase in total emissions. Newly constructed plants, most of which already employ best available control technology—BACT—have no comparable capability for further reducing emissions to make room for plant expansion.

In summary, these are the major issues and problems regarding future economic growth in nonattainment areas, which I would like to see addressed by the National Commission on Air Quality. There are other related concerns, such as the relevance of the present ambient air quality standards to the seriousness of air pollution problems in a given area over a period of time, the precision of present air quality measuring devices, and the contribution of natural background sources to the total pollution level.

However, the heart of the issue is the question of maintaining a proper balance between continued economic growth and protection of public health and welfare from heavily polluted air. Admittedly, this "proper balance" is difficult to achieve, but the public interest demands that we continue to try. I hope that efforts to find the best possible solution to this problem will continue when this bill goes to conference with the House and in future committee deliberations on air pollution problems.

I ask that my more detailed statement on this issue be printed in the Record.

#### STATEMENT OF SENATOR THURMOND

I would like to make a few additional comments in regard to Section 11 of S. 3219, which deals with the industrial expansion in areas not yet meeting national ambient air quality standards of the 1970 Act. I believe the distinguished Chairman of the Public Works Committee, as well as the other Committee Members, are well aware that the problem of industrial expansion in "nonattainment" areas is a serious one which affects many industries.

In fact, it is my understanding that the non-attainment problem affects well over half of the geographical area of the United States, including most of the urban areas, where the problem of unemployment is especially severe. Under the present law, new facilities cannot be built, nor can existing plants be expanded, in areas where any ambient air quality standard is not being met, if the facilities would emit any pollutant subject to regulation under the Clean Air Act. Thus, unless the law is changed, the economies of these areas may not continue to grow at a healthy rate. At a time when more jobs are greatly needed, such severe limitations on economic growth are unacceptable. I believe it is clear that the Clean Air Act should be amended to ameliorate this unfortunate situation, while continuing to adequately protect public health.

Mr. President, I know that the Public Works Committee has recognized this problem and attempted to deal with it in Section 11 of the bill before us. I appreciate the Committee's efforts and, particularly, the leadership of Senator Randolph in this regard. However, I do not believe Section 11 goes far enough to allow the degree of flexibility needed.

The principal problem with the Committee language is that it permits growth only in situations where plants can be sufficiently "cleaned up" to make room for new facilities, with absolutely no increase in the total emission from both present and newly-built facilities allowed. This approach assumes that the particular industry which wants to expand: (1) already has facilities in the area and (2) has the technological ability to sufficiently reduce air pollution from its existing plants to allow installation of new plant capacity without any increase in combined emissions. However, the fact is that many recently constructed industrial plants already employ "Best-Available Control Technology" (BACT) and, unlike industries which have not yet installed the best available pollution control equipment have nothing to trade off for plant expansion.

For example, a Nationally known firm is now in the process of building a major new facility in the North Charleston area of South Carolina—one of only two areas in my State having air quality maintenance problems. This plant will employ BACT—it will be doing everything possible within the limits of today's state of knowledge of air pollution control to promote clean air—but this company will be precluded, under present law and this bill, from any plant expansion in the future at this site, while less clean plants may have the capacity for further growth.

Mr. President, I think this is an intolerable inequity in the present bill, and I hope the Managers of this bill will explore an improved solution to this problem in Conference with the House. It is my understanding that the present version of the House Clean Air Bill goes a little further to provide flexibility for desirable economic growth. From what I have seen, it does not go as far as it probably should, although efforts may be made on the House floor to further modify this provision in the direction of reasonableness.

I ask that a letter to me from the Governor of South Carolina, the Honorable James B. Edwards, be printed in the Record. This letter describes some of the problems with S. 3219 which South Carolina state government officials have foreseen, including the potential adverse impact of Sections 6 and 11. I also ask that a summary of the efforts of Section 11 on refinery and other facility expansion in the petroleum industry be included in the Record following the aforementioned letter from Governor Edwards.

The letter and summary follows:

STATE OF SOUTH CAROLINA,  
Columbia, S.C., June 10, 1976.

Hon. J. STROM THURMOND,  
U.S. Senate, Washington, D.C.

DEAR STROM: Undoubtedly, the various states of the nation will be watching the Senate debate on S.B. 3219 (Amendments to the Clean Air Act of 1970) with a great deal of interest as well as a certain degree of trepidation. South Carolina is no exception. Please permit me to share some of the concerns our State Development Board and this office have about the Clean Air Act as well as the proposed Amendments.

While we applaud the basic intent of Congress, the courts and the Environmental Protection Agency to improve the ambient air quality of the nation as a means of benefiting the health and welfare of the citizenry, we are also alarmed that regulations may be drawn by E.P.A. which provide that air quality be the only determinant in allowing a new or expanded manufacturing plant project. As you are well aware, the economic development needs of South Carolina are still substantial. We would, therefore, hope that the State of South Carolina would have the right under the amended Clean Air Act to determine when an industrial development project would be clearly in the best interest of the State and its people.

It is with these concerns firmly in mind that we make the following recommendations for your consideration and whatever action you deem appropriate during the forthcoming debate:

1. The question of no-significant deterioration should be postponed until enough data to make a reasonable decision on the subject can be obtained. The cost/benefit ratio of this proposal is highly questionable from our perspective. We would, therefore, support the Moss Amendment which would postpone the adoption of the no-significant deterioration policy.

2. Regarding the Clean Air Act Amendments as recommended by the Senate Public Works Committee, we have real concerns about Section 11 of the proposed amendments. In subparagraph (C) (please see attachment), we believe it would be impossible under this regulation for a manufacturing plant to expand its facilities in nonattainment or maintenance areas of the state even though the existing facility was utilizing best available control technology. This would be unfair to both the company and the community as air quality would be the overriding consideration. Many of the newer industries in South Carolina already utilize best available control technology and, therefore, have nothing to trade off in their efforts to expand in the state. These companies would be at a disadvantage to those companies which have yet to install new pollution abatement facilities on their older plants.

3. Subparagraph (D) leaves much to conjecture and should be clarified as to intent. We would, therefore, recommend that it be clarified or deleted.

4. Insofar as we believe that the social, economic and environmental benefits from a particular project which utilizes best available control technology may far outweigh any air quality deterioration which might result, we feel that some mechanism be instituted to provide for this overall assessment. In South Carolina, this could be accomplished with an economic impact analysis of a specific project being provided by the State Development Board to the Department of Health and Environmental Control. Other states could institute similar procedures.

In this context, it would be beneficial if the amendment could carry an additional subparagraph (E) worded along the following lines:

The foregoing regulations will apply in every instance unless in the judgment of responsible state and local government agencies the social, economic and environmental benefits of such proposed facility outweigh any air quality benefits to be derived by preventing such construction or modification, but in no instance shall less than best available control technology be permitted.

It would be extremely detrimental to the future of South Carolina, and indeed to all states, if air quality regulations were to be permitted to override the state's overall economic development needs. Please assist us in this matter.

Sincerely,

JAMES B. EDWARDS,  
*Governor.*

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#### S. 3219 AND H.R. 10498: AN INSUFFICIENT RESPONSE

The Senate Public Works Committee and the House Commerce Committee, to their credit, recognized the need for remedy and attempted to supply it in two bills to amend the Clean Air Act which were reported earlier this year—S. 3219 and H.R. 10498. Unfortunately, neither of the pertinent sections in these two bills, Section 11 of the Senate bill and Section 115 of the House bill, provides the promised relief. Under these sections, regardless of how well it might be controlled, a major new or expanded facility that would emit a pollutant subject to an unattained air quality standard could not be built, unless the owner had facilities in the area that could be cleaned up to more than compensate for the proposed new or expanded facility.

Even assuming that an applicant had other facilities in the area, one consequence of the language in these two bills would be to reward facilities that have made little progress in controlling their emissions and to penalize those that have made substantial progress. A lagging facility in a nonattainment area would be able to modernize throughout, expand, and still meet the requirements of these two bills. A facility that has already achieved a high degree of air pollution control, however, would not be able to achieve sufficient additional reduction of emissions to make expansion possible. As for a newcomer wishing to build a facility in a nonattainment area, he would have only one course open to him—namely, to buy an existing facility and simply shut it down to make room for the new one.

#### SPECIFIC CONSEQUENCES OF PRESENT AND PROPOSED LAW

Every basic industry in the national economy is affected by present and proposed law dealing with expansion in nonattainment areas. Energy facilities, in particular, have already begun to experience the suppressive effects of the existing nonattainment requirements, and the signs for the future are ominous;

**Energy Reserves:** Amoco and Gulf have interests in a 5,000 acre oil shale tract in Colorado, called the Rio Blanco Oil Shale Project. The first year of ambient air quality monitoring on the undeveloped tract has revealed that national air quality standards were exceeded in more than 60 instances, most probably because of natural emissions, that is, airborne dust and vegetative hydrocarbon emissions. Under present and proposed law, severe restrictions are imposed on new construction and modification in all areas exceeding the national standards, the Rio Blanco Project and other oil shale projects in such areas cannot go forward.

Phillips also holds uranium leases in the northwestern portion of New Mexico and coal leases in the lignite fields that angle from east central Texas up into Arkansas. Wherever these energy reserves are in air quality control regions exceeding present ambient air quality standards, no development can take place.

**Pipelining:** Sohio is now planning a trans-U.S. pipeline running from Long Beach, California, to Midland, Texas, from which point oil could be transported to practically anywhere in the Midwest and on the East Coast. Several hundred thousand barrels of new storage capacity would have to be built to sustain the pipeline's estimated throughput of 700,000 barrels per day. Even with best available control technology, the company, having no other facilities in that area, would be unable to show reasonable further progress toward attainment of the applicable national ambient air quality standard. Without the tanks, of course, the pipeline cannot be put into operation.

Up the coast from Long Beach, at Estero, California, Sohio had planned to build off-shore mooring for large seagoing tankers and onshore storage tanks for the incoming crude oil. These facilities would have handled 300,000 barrels per day, with future expansion to 500,000 barrels per day. Environmental considerations changed the economic projections for these facilities, and the plans were shelved. Under present and proposed law, these plans, temporarily shelved, may have to be permanently cancelled.

**Refining:** The Hampton Roads Energy Company has been planning a 175,000 barrel per day refinery, with a supporting marine terminal, at Portsmouth, Virginia, for almost three years. It is planned for the refinery to make low-sulfur fuels, themselves an environmental plus. During that time, the company secured the necessary approvals of all state agencies, including the State Air Pollution Board, Marine Resources Commission, and State Water Board. It also obtained preliminary approvals from the Environmental Protection Agency. Then on April 19, 1976, a representative of the Regional EPA Office at Philadelphia announced that the proposed refinery would be "environmentally unacceptable." because the surrounding area has not attained the hydrocarbon standards. The refinery, now stalled, may not be built.

Exxon estimates that to date, hundreds of millions of dollars have been spent to install catalytic cracker feed desulfurizers required to reduce sulfur dioxide emissions from the crackers themselves and to install product desulfurizers for reducing the sulfur content of home heating oils. Had the language of the two bills now pending in Congress been in effect—because major refining centers like Houston, Los Angeles, and Northern New Jersey are already exceeding one or another of the national ambient air quality standards—many, perhaps most of these desulfurizers could not have been put into place.

As for the future, EPA is now conducting sulfate studies. If those studies should lead to the decision that it is necessary to desulfurize gasoline, refineries would not be able to install the needed desulfurization equipment in areas now exceeding hydrocarbon standards, including the Nation's major refining centers, mentioned above. Already, refiners are concerned that they will be unable to build new units needed to comply with EPA's regulations on lead in gasoline without reducing output next summer.

Generally speaking, refining capacity now in existence and now under construction is adequate to accommodate the Nation's immediate energy needs. As the demand for energy grows, however, the need for refinery capacity also will grow. Shell, for example, estimates that in order to meet expected demands in the near and middle future, it will be necessary to expand at some 15 of its refineries and petrochemical plants. To the extent that such expansions are prevented from occurring because of nonattainment restrictions, to the same extent a wide array of products ranging from home heating oils to synthetic rubbers will not materialize.

## CONCLUSION

Unless the non-attainment issue is resolved intelligently, before Congress acts on this legislation, the major domestic goals of job creation, economic recovery and greater energy self-sufficiency will be completely undermined.

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Senator THURMOND [continuing]. I want to emphasize that the unwise constraints of present law and Section 11 will affect *many* basic industries vital to our National economy, including the petroleum industry. However, at a time when we also should be striving for energy independence for the United States; when new refinery capacity must be built to meet required gasoline octane levels without the addition of lead; when it is vitally important to encourage economies of scale and transportation efficiency; I think it is particularly important to allow necessary expansion in the petroleum industry.

Upon becoming aware of the problems of industrial growth in non-attainment areas, I wrote to Mr. Russell Train, Head of the Environmental Protection Agency. I asked for his comments on a particular draft amendment recommended to me by a group of my constituents and also asked for a statement of EPA views on this issue. I ask that Mr. Train's reply to me is printed in the Record at the end of my remarks.

Mr. President, EPA is sympathetic to the need for granting the individual states some flexibility to allow new industry to locate and existing industry to expand in non-attainment areas. Frankly, the "pollution trade-off approach" recommended by Mr. Train has both advantages and disadvantages. However, in discussing this issue with the Managers of the bill, I can understand their desire to not endorse any particular new methods for allowing industrial growth in non-attainment areas without the benefit of detailed public hearings and thorough Committee consideration of the issues and implications involved.

At the same time, I believe this problem needs to be further considered by Congress. Accordingly, I have drafted an amendment to Section 37 of S. 3219. This portion of the bill adds new Section 315 to the Clean Air Act and establishes a National Commission on Air Quality to study various air pollution problems and control strategies.

My amendment would simply add a new paragraph to the charter of this Commission, directing it to specifically study alternative means of allowing economic growth in non-attainment areas without interfering with ongoing efforts to further improve air quality in these regions. I have discussed this proposal with the Managers of the bill and believe it is acceptable to them.

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ENVIRONMENTAL PROTECTION AGENCY.  
Washington, D.C., July 26, 1976.

Hon. STROM THURMOND,  
U.S. Senate,  
Washington, D.C.

DEAR SENATOR THURMOND: This letter is in response to your request of July 15, 1976, for the views of the Environmental Protection Agency concerning the subject of growth in air quality control regions currently exceeding the national ambient air quality standards. Specifically, you requested our views on a proposed substitute amendment for section 11 of S. 3219, the Clean Air Act Amendments of 1976.

As you may be aware, the Clean Air Act of 1970 required the Environmental Protection Agency to establish health-related national air pollution standards. The Act mandated that these standards be met within three years after their promulgation with the possibility of a two-year extension. This meant that by 1975 or at the latest 1977, the law required that the Nation's air pollution levels be at or below the national ambient air quality standards.

Although we have made great progress in the attainment of the standards, a substantial percentage of the 247 air quality control regions in the Nation are currently reporting violations. In general, these "non-attainment" areas are the urban population centers throughout the Nation.

In order to attain the national ambient air quality standards and still permit economic growth in our urban areas, the Environmental Protection Agency has adopted the following policy based on its judgment of the legal authority and

obligations that it has under the Clean Air Act. The Agency would permit the location of major new and expanded facilities only to the extent that the resulting emissions do not exacerbate current violations of the primary national ambient air quality standards and do not interfere with making reasonable progress toward the timely attainment of these standards.

If our analysis reveals that a source is likely to have an adverse impact on the attainment and maintenance of a primary national ambient air quality standard and the source still desires to locate at the proposed site or the State or local agency decides that alternative sites are not available, a source must meet the following conditions. First, the new facility must apply the best available control technology. Second, all existing sources owned or controlled by the owner or operator of the proposed facility in the same air quality control region must be in compliance with all applicable emission limitations or in compliance with an approved schedule and timetable for compliance under a provision of an applicable implementation plan or an enforcement order issued under section 113. Third, emission limitations are established for existing sources in the area of the proposed source whether or not they are under the same ownership so that the total allowable emissions from the existing and proposed sources is sufficiently less than the total allowable emissions from the existing sources under the applicable implementation plan prior to the request to construct or modify so as to represent reasonable further progress toward attainment of the applicable national ambient air quality standard. Fourth, ambient air quality concentrations cannot increase at any location that presently exceeds the national ambient air quality standard.

This set of conditions is collectively known as the "trade-off policy." In most cases, emission trade-offs would apply to sources located in close geographic proximity relative to the calculated air quality impact of the new source. Only intra-pollutant tradeoffs are acceptable, e.g., limited to a single pollutant, such as sulfur dioxide.

We believe that the Agency policy is preferable to your proposed amendment and the current language of section 11 in S. 3219 because it permits economic development while also ensuring that the health-related air pollution standards will be attained and maintained. In terms of your proposed substitute amendment, the Agency policy is more desirable because it would allow the necessary trade-offs to be obtained by either the owner of the proposed source or through a general revision of the State implementation plan initiated by the local community or the State. Regarding the current language of section 11, EPA's policy is preferable from the economic standpoint because it allows new sources to locate in addition to the expansion of existing sources if all the applicable conditions are met.

In conclusion, we believe that the trade-off policy represents the proper balance between the attainment of the national ambient air quality standards and economic growth. Furthermore, we believe that the policy offer an economic rather than a regulatory incentive to industry to further reduce the emission of air pollutants.

Enclosed please find a copy of an amendment to S. 3219 which reflects EPA's policy as described above.

Sincerely yours,

RUSSELL E. TRAIN,  
*Administrator.*

Mr. BUCKLEY. I support adoption of the amendment offered by our colleague from South Carolina (Mr. Thurmond). He has focused on an important issue, one that the committee sought to ameliorate by adoption of section 11 of this bill. But I think this amendment will also be helpful.

The Senator from South Carolina was kind enough to share with me a letter from EPA Administrator Train. In the letter, Mr. Train makes this statement:

The agency would permit the location of major new and expanded facilities only to the extent that the resulting emissions do not exacerbate current violations of the primary national ambient air quality standards and do not interfere with making reasonable progress toward the timely attainment of those standards.

That flexibility is granted under existing law by section 110(a) (4), which prohibits "the construction or modification" of a source if the State determines the existence of the source will "prevent the attainment of maintenance" of an air quality standard.

There has been much discussion of whether the new provision in the bill adding a new subsection (g) to section 113, overrides section 110(a) (4). It is my belief and understanding that the new subsection (g) in no way overturns the latitude available under section 110(a) (4). It is my understanding that the floor manager (Mr. Muskie) shares my interpretation on this continuing latitude.

That is the present law, and that will continue to be the law under this bill. It is a procedure that eliminates the need for unwise schemes such as the creation of so-called pollution credits that could be bought or sold. I think this is a most appropriate subject for study by the Commission. I am happy to support the amendment.

MR. MUSKIE. I support the amendment.

MR. MORGAN. Does the amendment call for a study?

MR. THURMOND. The purpose of the amendment is to expand the charter of the national Commission on Air Quality created in this bill to specifically require a study of the most desirable means of permitting continued economic growth in air quality control regions where the national ambient air quality standards for any pollutant regulated under the Clean Air Act is being exceeded.

MR. MORGAN. Did I understand that Senator Buckley's comments related to some extent to the question of nonattainment regulated by section 11?

MR. THURMOND. In response to the question of the Senator from North Carolina, I think it is apparent that it is in the public interest to move first to hasten the achievement of a healthful level of air quality as promptly and as reasonably possible, and, second, allow job-creating economic growth to continue at a desirable level which does not undermine the attainment of the objectives of the Clean Air Act. While it is true that these two goals will at some point likely conflict with each other, that does not mean that a desirable balance between them cannot and should not be achieved.

My amendment would direct the National Commission on Air Quality to address this issue in its studies and provide recommendations to Congress for constructively dealing with it.

THE PRESIDING OFFICER. The question is on agreeing to the amendment.

The amendment was agreed to.

#### AMENDMENT NO. 2088

The Senator from Maine (Mr. Muskie), for the Senator from Hawaii (Mr. Inouye), proposes amendment No. 2088.

The amendment is as follows:

On page 77, line 6, insert "(a)" immediately following "Sec. 33."

On page 79, after line 13, insert the following new subsection:

"(b) Section 302(d) of the Clean Air Act is amended—

"(1) by striking out the word 'and' immediately preceding 'American Samoa';

"(2) by striking the period immediately following 'American Samoa' and inserting in lieu thereof ', and the Trust Territory of the Pacific Islands.'". [Sec. 302(d)]

Mr. MUSKIE. This amendment will add the Trust Territory of the Pacific Islands to the definition of "State" under the Clean Air Act. The effect would be to make that area subject to all the requirements of the Clean Air Act.

Mr. BUCKLEY. I have no objection whatever to that proposal. It seems to be a reasonable extension of specific authority.

The amendment was agreed to.

#### UP AMENDMENT NO. 304

The Senator from Maine (Mr. Muskie) proposes a technical amendment, unprinted amendment No. 304.

The amendment is as follows:

At the end thereof, add the following new section:

"SEC. 42. This Act may be cited as the 'Clean Air Amendments of 1976'."

Mr. HUDDLESTON. Some of the provisions in S. 3219 that concern me are those in section 9 relating to delayed compliance orders and penalties. Curiously, there has been little public note or discussion of this section.

To understand this provision, one must go back to the Clean Air Amendments of 1970. While that law generally is regarded as an excellent piece of legislation, inclusion in it of seemingly arbitrary mandated compliance dates has proved to be somewhat of a problem.

In 1972, when the Administrator of the Environmental Protection Agency approved State implementation plans in accordance with the act, he noted that it would be impossible to carry out all the plans within the allotted times. In subsequent enforcement of the plans, EPA and the States, indeed, found it necessary to issue enforcement orders with compliance dates which extend years beyond the date mandated in law for attainment and maintenance of the national ambient air quality standards. It was not, in many cases, a matter of not wanting to comply or not trying to comply. It was simply that many sources physically could not—even assuming unlimited funds—comply with all requirements within the allowed time. It is important to note that compliance with emission limitations is required, even though ambient air quality is such that health and welfare are protected.

The Senate bill before us now includes new deadlines: January 1, 1979, for most sources, including those that already have been issued enforcement orders with later compliance dates; July 1, 1980, for sources ordered by FEA to convert to coal or those switching to coal because of natural gas curtailment; January 1, 1981, for those willing to undertake the expense and risk of experimenting with innovative technology; and for sources subject to newly promulgated plans or revised requirements that are more stringent than originally approved, 3 years after such promulgation or revision.

As I understand it, if compliance is later than those mandatory dates, the source automatically would have to begin paying delayed compliance penalties—unless it can be shown that noncompliance is beyond the owner's control.

An example of the problems caused by the compliance penalties in S. 3219 may prove helpful.

Louisville Gas & Electric Co. in my home State of Kentucky has been praised by EPA as most cooperative and enlightened. They pioneered application of flue-gas desulfurization in this country, and they have

signed a consent order calling for installation of scrubbers throughout their system. For some units, however, compliance dates extend as late as 1985. EPA recognizes that it takes time to design, order, fabricate, install, finance, and bring into operation controls for an entire electric utility system without sacrificing integrity and reliability of service, and such considerations undoubtedly went into the Agency's decision regarding practicable compliance dates. Under S. 3219, however, it appears that the company would begin paying automatic penalties of some \$3,000,000 per year for those units that are not in operation by January 1, 1979. I cannot believe that the committee intended to declare such a cooperative company in bad faith on that arbitrary date, and to subject it to such penalties.

The committee report says the penalties would be imposed to overcome economic advantage gained by noncomplying sources, and to prod the recalcitrants who find it cheaper to pay attorneys' fees for litigation than to purchase control equipment.

In light of the types of noncomplying sources listed by EPA: Municipal incinerators, public powerplants, schools, Army and Navy installations, two GSA powerplants right here in the shadow of the Capitol, and many similar facilities, this reasoning is not at all clear to me. How do such publicly owned sources, through delaying tactics, gain an economic advantage over similar sources?

Mr. STAFFORD. I am pleased that the committee has sought in this bill to find imaginative new means for encouraging the most expeditious abatement of pollution, while minimizing the effects of these measures on the economy and the Nation's supply of energy. In particular, I believe that the delayed compliance penalty provision will provide a significant incentive for compliance, while assuring that non-compliance will not result in unwarranted closing down of energy and other facilities. I think this measure will also go a long way toward assuring fairness to all subject to the Clean Air Act, by guaranteeing to those who have complied with the law that they will not be at an unfair disadvantage in competing with those who have not met their obligations.

I believe this penalty incorporates a sound principle. In passing the 1970 act, we provided that during the formulation of the State implementation plan, the States were required to hold public hearings on the measures they proposed to use to attain the national health protective air quality standards. We expected that those industries who might be affected by the State plans would have an ample opportunity to present their views concerning the cost or feasibility of the measures proposed by the State to meet the standards. The States would then have the best information available to decide what measures for abating pollution were available, and how to meet the standards most economically. It was expected that claims of excess cost or infeasibility would be raised and decided by the States at this point. These claims would then be foreclosed in later enforcement proceedings although they might form the basis for a subsequent revision of a State plan. Dicta to the contrary in the Supreme Court's recent opinion in *Union Electric* against EPA are, in my opinion, incorrect.

Without this rule, the congressional plan for expeditiously attaining healthful air quality could have been easily frustrated by those who ignored the original planning process, then waited until an enforcement action to raise their objections to the requirements of the plan.

In the pending bill, we have recognized the unfortunate fact that a large number of pollution sources did not meet their timetables for compliance in the State plans. For those who have not yet complied, we have allowed the States to put off the day of reckoning until as late as 1979, or 1981 in some cases. At that time, those who have still not complied will, and should, be subject to the full enforcement of the law, including the delayed compliance penalty.

At that time, the requirements of the State implementation plans will have been in effect for 7 to 9 years. The time for questioning the cost or feasibility of these requirements will be long past. For this reason I wish to be certain that I am correct in my understanding that claims regarding neither the cost nor availability of the technology, systems, or other measures needed to comply can be raised to question or delay the imposition or full effectiveness of the delayed compliance penalty.

I note with approval that the bill does not grant jurisdiction in the courts for reviewing a delayed compliance penalty on the ground that meeting the applicable requirement of the State plan would be costly; and that the committee's report specifically notes the issue of cost may not be the basis for review of a penalty. I wish to be sure, however, that the same applies to a claim that technology is not available to meet the requirement.

Mr. MUSKIE. Your understanding is correct. Since the question of feasibility was to have been addressed in the process of formulating the State implementation plan, the Federal courts would not have jurisdiction to review delayed compliance penalty on the basis of a claim that technology was not available to meet the applicable requirement. The opportunity to present these claims was available when the plan was formulated. It remains available as a grounds for requesting a revision of a general requirement of a State implementation plan. It may not be raised in defense to a delayed compliance penalty or other enforcement action.

Mr. STAFFORD. I note that the bill provides that a penalty could not be applied where compliance with the applicable requirement was impossible owing to reasons "wholly beyond the control" of the source owner. Am I correct, then, in assuming that this exception does not cover a claim that technology is not available?

Mr. MUSKIE. Yes; you are correct. The exceptions for events wholly beyond the control of the source owner is intended to be limited very narrowly, in keeping with the bill's intent that the penalty should provide a strong incentive for compliance and a safeguard against unfairness to those who more expeditiously met the act's cleanup requirements.

It is intended to apply only in cases of natural disaster, fire, embargo, or the like, which interfere with the timely installation of the equipment, systems or techniques, required to meet the State plan's requirements, and then only for a period equal to the duration of the delay-causing event. It might be available where a supplier or contractor was unable to meet a final completion date for emission control equipment, but even in this case, it would not be available if there was evidence suggesting that the delay was in any way caused or encouraged by the source owner himself. For example, if the source owner unduly delayed negotiations for needed equipment in the first instance by demanding unusual guarantees or by making other de-

mands not typical of contract negotiations in its industry for production equipment, the exception would not be available. Likewise, it would not be available where the source owner placed unusual restrictions on the construction work of the supplier, or delayed shake-down testing beyond the normal interval for equipment used in its production process. And in addition to these conditions it would not be available in any case unless the source owner could show, by reference to his own financial and organizational records, that procuring and implementing the needed measures had been given highest priority in the owner's planning and budgeting process.

It was our view that by the time the penalty was imposed, the opportunity for arguing that the necessary pollution control equipment or other systems or measures were not available or technologically feasible had long since lapsed.

Mr. STAFFORD. That was my understanding also, and I am reassured to hear that it was the intent of the committee when it drafted this bill.

#### LEGISLATIVE HISTORY ON CITIZEN SUITS UNDER SECTION 304 OF THE CLEAN AIR ACT AMENDMENTS

Mr. MUSKIE. Sections 6 and 34 of this bill would expand the rights of citizens to bring suits under section 304 of the Clean Air Act by authorizing such suits against any person who proposes to construct or constructs any new major emitting facility in violation of the provisions of section 110(g) which protect against degradation of clean air areas. It is also by understanding that this would in no way diminish the rights of citizens under existing law to sue in the Federal courts for claims arising under the Clean Air Act.

Specifically, general Federal jurisdiction is preserved by this amendment as well as the special grant of jurisdiction under section 304 as it exists prior to these amendments. Moreover, the class of non-discretionary duties of the Administrator with respect to which section 304 authorizes suits is also broadened to include those duties imposed by section 110(g) including paragraph (9) thereof.

Where section 304 of these amendments authorizes suits against the construction of facilities "without a permit required under section 110(g)" that it is referring to a permit which is valid and which has been legally issued under paragraphs (4) and (5) of section (g). In other words, if a State permit has been issued in violation of the requirements of section 110(g), a citizen will have access to Federal court under section 304 to prevent the construction of the permitted facility.

In view of these clarifications and the committee's report, it would seem that a challenge to the legality of a permit which a State has actually issued, or proposed to issue, under section 110(g), may be brought either in Federal district court under section 304(a), if the citizen has first sought administrative remedies under the State permit process, or, alternatively, a citizen may elect to seek review of the legality of the permit in a State court.

Finally, the committee report on page 82 states that—

The Committee does not intend by these amendments to section 304 to provide another means to a citizen to challenge the legality or validity of a State-granted permit under Sec. 100(g).

That statement refers only to challenges involving Federal lands or Federal officials, alluded to in the preceding sentence with respect to which suits are already authorized under existing law.

In other words, the amendment which adds paragraph (3) to section 304 would alter current rights of judicial review only to the extent of authorizing suits in Federal court to prevent the construction of any new major emitting facility without a valid permit as required under section 110(g) after exhausting any available administrative remedies at the State level.

#### VAPOR RECOVERY

Mr. EAGLETON. I would like to ask the distinguished floor manager whether the committee considered the problems small gasoline retailers would have in complying with EPA's proposed new vapor recovery standards? Did the committee address this problem and is there anything in the bill before us which would give some relief to those independent small businessmen?

Mr. MUSKIE. The committee spent a considerable time discussing the proposed regulations which would require retail gasoline outlets to equip their pumps with vapor recovery systems. The committee agreed that it was an important initiative to take, but there were questions about the effectiveness of the equipment which was being mandated by the regulations and also concern about the cost of the equipment to small operators. After extensive communication with the agency the committee concluded that EPA was sensitive to these problems and would take due account of them in its final regulations. So the committee decided not to interfere in that process, but rather to trust that the problems would be worked out within the agency and I am confident that will be done.

Mr. EAGLETON. As the Senator knows, I had considered offering an amendment to allow small retail operations a period of 4 years in which to fully comply with the proposed standards. But I appreciate the assurances given by the distinguished chairman that the problems have been brought to the attention of the EPA and the committee has expressed its concern that there be a satisfactory resolution of them. I will not press my amendment for that reason but will accept the committee judgment that this thing will be worked out.

Mr. MUSKIE. I am confident it will be.

Mr. BENTSEN. The 1976 amendments also include a provision which is specifically written to encourage the development and application of innovative emission control technology. Section 9(a) of the bill, adding a new subparagraph 4 to section 113 of the act, will permit a source to seek a compliance date extension up to January 1, 1981, for the application of an innovative production process or control techniques which has the potential for reducing emissions to a greater extent or at a cost far less than existing technologies and which also has the potential for industrywide application.

As one of the authors of this provision, I believe this to be a helpful addition to the law. In writing the 1970 act, the Congress established a mechanism for pollution abatement with both firm deadlines and stringent emission limitations. Both were needed to accomplish the emissions reductions which have already been achieved. They have, moreover, encouraged industry to undertake a major research effort to develop more effective and less costly technologies.

As with any research and development effort, however, progress is not always smooth, uninterrupted, or without setback. Promising leads often have had to be abandoned, and new possibilities pursued. This is the very nature of invention.

In reporting the 1976 Amendments to the Clean Air Act, the Public Works Committee has acknowledged that promising pollution abatement technologies are now being developed which may not be fully applicable by January 1, 1979, the newly authorized deadline. It has, therefore, given State authorities the option of granting an additional extension of up to 2 full years to sources developing such promising new technologies and new production processes which would significantly reduce emissions.

In acting upon a request for additional time under this innovative technology provision, the State authority may grant an extension under either the bonding or delayed compliance penalty provisions specified elsewhere in section 9 of these amendments. A bond would be required of a source which intended to replace its entire production process or facility and which would not comply with the gradual phase-in requirements specified in a routine schedule and timetable for compliance. The delayed compliance penalty mechanism would be applicable to a source which proposed to meet the requisite emission limitation by modifying or replacing pollution abatement equipment or a portion of its production process and which could meet the phase-in requirements of a schedule and timetable for compliance.

Research originally undertaken to improve equipment or techniques utilized solely for emission reduction might well have to be altered with the realization that the greatest abatement can be achieved through the alteration or replacement of one or more of the various phases of the overall production process. The authors of this language do not intend that the replacement of such a subportion of the overall production process necessarily requires implementation of the bonding provision. In fact, the source should qualify under the delayed compliance penalty mechanism, provided that it can meet the phase-in requirements of a schedule and timetable for compliance.

The committee report refers to a change in production process as one of the defining criteria for an extension granted under the bonding mechanism. The language in the bill specifying the bonding provision indicates that a complete change in the production process; that is, the replacement of the facility itself or the introduction of an entirely new production process, covering all aspects of production is contemplated. Under the innovative technology provision, a bond would also be required of a source which proposed to meet its emission limitation by totally replacing its production process.

The authors of the innovative technology provision certainly do not intend that it be an invitation to further delay in the attainment of the requisite emission limitation. It is to be applicable only to those sources which can demonstrate that they have committed themselves to developing technology which has the potential for emission reductions far greater or at significantly less expense than existing technology and which has the potential for industrywide application. I would like to amplify on Senator Bentsen's remarks with respect to the innovation technology section of the bill. Section 9(a) of the committee bill adds a new subparagraph 4 to section 113 of present law which permits

a source to seek a compliance date extension until January 1, 1981, for the application of an innovative production process on control technique. Personally, I feel that section 9(a), by encouraging the development and application of innovative technology, is one of the committee's major contributions in this bill. Increasingly, environmental regulations are being subjected to an economic attack that is focusing on potential job losses and economic costs. Innovative technologies that provide more effective and less costly emission reductions offer at least a partial answer to some of the economic objections being raised against environmental regulations.

Mr. DOMENICI. I would like to amplify on Senator Bentsen's remarks with respect to the innovation technology section of the bill. Section 9(a) of the committee bill adds a new subparagraph 4 to section 113 of present law which permits a source to seek a compliance date extension until January 1, 1981, for the application of an innovative production process on control technique. Personally, I feel that section 9(a), by encouraging the development and application of innovative technology, is one of the committee's major contributions in this bill. Increasingly, environmental regulations are being subjected to an economic attack that is focusing on potential job losses and economic costs. Innovative technologies that provide more effective and less costly emission reductions offer at least a partial answer to some of the economic objections being raised against environmental regulations.

Mr. BUCKLEY. As one who, along with Senators Domenici and Bentsen, authored this provision, I would like to stress that I see this provision as no more than Congress honoring its commitment to those who have undertaken research efforts as a result of the passage of the 1970 amendments to the Clean Air Act. As with any research effort, progress is not always smooth and uninterrupted. Promising leads have had to be abandoned and new possibilities pursued. This is the very nature of invention. The committee amendments acknowledge the extra time needed to bring some emerging technologies to fruition. Under our amendment, States are given the option of granting an additional 2-year extension to the 1970 deadline for sources developing promising new technologies.

Mr. DOMENICI. I think it should be stressed that a State, when acting upon a request for additional time under this innovative technology provision, may grant an extension under either the bonding or delayed compliance penalty provisions found elsewhere in section 9 of the amendments. A bond would be required where a source intended to replace its entire production process and which could not comply with the gradual phase-in requirements of a schedule for compliance that required specific milestones or increments of improvement at given times. In contrast, where a source could meet the phase-in requirements of a schedule for compliance with well-established milestones, then the delayed compliance penalty should be employed. [Sec. 120]

Mr. BENTSEN. That is exactly right. I appreciate your use of the imperative "should" with respect to use of the delayed compliance penalty where the requirement of a compliance schedule with milestones of progress can be met. None of us intends that the replacement of a subportion of the overall production process requires use of the bonding provision. [Sec. 113(d)(3)]

Mr. BUCKLEY. The language of the bill substantiates the point made by the Senator from Texas. Section 9, the amendment to section 113(d)(3) of the act states that the bond is triggered by "a complete change in production process." I read the word "complete" as meaning the replacement of the facility itself or the introduction of an entirely new production process, covering all aspects of production, without defined milestones.

Mr. DOMENICI. That is certainly my view on the matter.

Mr. BENTSEN. I concur.

#### AUTO EMISSIONS

Mr. GRIFFIN. After years of piling more and more regulations on the auto industry and its workers, the pending legislation represents a belated, but important, recognition of the need to reverse that trend.

Unfortunately, the auto emission standards and deadlines mandated by the Clean Air Act of 1970 have created a constant state of brinkmanship. On three separate occasions—usually at the last hour—Congress or the EPA Administrator has been forced to move back deadlines for compliance to avoid massive economic disruption and hardship for thousands of workers in the auto industry and related industries.

Once again we are faced with the need for prompt action to avoid delay in the introduction of 1979 model cars. Because of congressional inaction with respect to this legislation, the normal date for beginning auto emission certification tests for the 1979 models has already passed.

While the pending bill is a step in the right direction, it suffers from the same basic deficiencies that exist in the 1970 act. Namely, too much is required in too short a time frame.

The unreasonably high standards and tight schedule for compliance contained in the Clean Air Act have forced development of costly "makeshift" technology, instead of longer term alternatives that are less polluting and more energy efficient. The use of catalytic converters and other pollution control devices, for example, have added from \$200 to \$400 to new car prices. And, catalyst technology has created another potential air hazard in the form of sulfuric acid emissions.

Unfortunately, the bill now under consideration is likely to increase fuel consumption, boost new car costs sharply, delay further the introduction of alternative technologies, and result in little additional benefits to public health.

In contrast to the administration's proposal for a 5-year freeze on auto emission standards at 1976 levels, this legislation would extend current standards for hydrocarbons—HC—and carbon monoxide—CO—for only 1 additional year and would extend the deadline for full compliance with a slightly modified nitrogen oxides—NO<sub>x</sub>—standard by only 2 years.

From an energy standpoint, the standards in S. 3219 would be particularly harmful—with estimates of fuel economy loss ranging from 10 to 20 percent. The Department of Transportation projects that a fuel economy penalty of 10 to 15 percent could lead to an increase in annual fuel consumption roughly equivalent to about a third of the flow of the Alaskan oil pipeline.

At a time when we should be trying to decrease our reliance on foreign energy sources, this legislation fails to go far enough in correcting errors of the past. And, it also conflicts with Congress more recent action to impose mandatory fuel economy standards by the 1978 model year.

The cost impact of these standards is also a matter of great concern. To meet these requirements, a joint EPA-DOT-FEA study completed earlier this year estimated higher lifetime costs of \$300 to \$700 for new cars by 1980. Those higher costs could have a profound negative effect on sales and unemployment, as we witnessed during the past recession.

According to a study for the *New York Times* by Wassily Leontief, a Nobel Prize-winning Harvard economist, each drop in car sales of \$1 billion—or about 3 percent of gross per year—puts 57,000 Americans out of work. Many of these lost jobs are in nonautomotive industries such as steel, textiles, chemicals, glass, mining, and the service industries. Thus, the entire economy—not just Detroit—would suffer if car sales are artificially depressed.

Furthermore, to the extent that new car sales are reduced, the replacement of older higher polluting cars takes that much longer. Indeed, excessive regulation can be self-defeating.

Another problem with the stringent standards in the bill is the inhibiting effect they may have on efforts to develop alternative technologies, such as the Stirling, lean-burn, stratified charge, and diesel engines. In a statement to the Senate Public Works Committee last October, Dr. Eric Stork, Deputy Assistant EPA Administrator for Mobile Source Air Pollution, indicated that NO<sub>x</sub> standards below 2, or at least 1.5, gm/mi means that “no automaker is likely to pursue promising engine or emission control approaches that involved stratified or other lean-burn techniques.” Although the NO<sub>x</sub> standard in the bill has been reduced, it would still remain at a 1.0 gm/mi level.

Similar conclusions have been reached by the Federal Energy Administration and the Energy Resources Council, as well as in a 1974 study sponsored by the National Science Foundation.

More recently, an EPA report entitled “Automobile Emission Control—The Current Status and Development Trends as of March 1976,” predicted that NO<sub>x</sub> standards similar to those in S. 3219 could be met, but would “entail a high risk effort for manufacturers” even with the use of advanced three-way catalyst systems. The report also suggested that a 1.0 gm/mi standard should be delayed at least until 1981 if manufacturers place greater emphasis on fuel economy than on emissions. Because of Federal fuel economy standards, that situation is quite likely to happen.

Finally, from the important perspective of public health, there is considerable evidence to indicate that the bill's restrictive standards will not improve air quality substantially.

For example, the National Academy of Sciences, in its 1974 report to the Senate Public Works Committee, concluded that both the CO and NO<sub>x</sub> standards may be more stringent than necessary to meet Federal ambient air quality standards. The report also noted that a 2.0 gm/mi NO<sub>x</sub> standard could achieve much of the estimated benefits “at a relatively low fraction of the cost of obtaining the stricter” statutory standards.

The EPA-DOT-FEA study referred to earlier also shows there is little justification from an air quality standpoint to adopt standards as restrictive as those contained in the pending legislation. In fact, the results of that study indicate that standards and deadlines considerably less stringent than those contained in S. 3219 would have less adverse impact on public health.

It should be pointed out that a great degree of progress has already been achieved in cleaning up auto emissions. Approximately two-thirds of the 90-percent reduction goal mandated by the 1970 act has been accomplished. But, there is considerable doubt that the benefits of fully meeting those original goals outweigh the demonstrated risks and costs involved.

Apart from these major reservations, the bill also includes some other troublesome features, such as the provisions that would: First, virtually eliminate Federal preemption of more stringent State standards; second, require production line tests of every new vehicle produced; and third, mandate percentage reductions in truck emissions equivalent to those for cars. That latter requirement could increase costs by as much as \$1,000 per vehicle.

It is essential that the industry know with certainty what will be required of it as soon as possible to prevent economic chaos next year when the 1978 models are scheduled to be introduced. Accordingly, I urge the Senate to act promptly on this measure. However, I am hopeful that some of my concerns expressed above can be resolved in conference.

#### A BALANCED APPROACH TO CLEAN AIR

MR. HUMPHREY. Under the proposed Senate bill, S. 3219, the States would designate their "clean air" areas into two classes in which certain increases or "increments" of additional emissions of particulates and sulfur oxide would be allowed. Clean air areas are those areas in which the quality of the air is cleaner than required by existing primary and secondary national ambient air quality standards.

The most protected areas, class I areas, would include international parks, as well as national parks, wilderness areas, and memorial parks of over 5,000 acres. It is important to protect these areas, especially in view of our rapidly expanding population, which is expected to double by the year 2000, and in view of our diminishing number of open spaces. Increased pollution or emissions of particulates and sulfur oxide up to certain incremental units will be allowed in these areas.

The States will have full authority to issue construction permits to all new major pollution sources, called major emitting sources, upon a showing that the incremental limits will not be violated. Moreover, a special exception to the general rule would allow industrial expansion at an existing site under specified conditions. The incremental limits and the site expansion exception represent what are believed to be reasonable compromises between environmental enhancement and industrial growth.

The proposed nonsignificant deterioration standard has generated much emotionalism. Senator Randolph prefers to look at the facts. One cannot ignore the fact that the Senate Public Works Committee reported the bill by an overwhelming vote of 12 to 1. The lone dissenter felt that the bill was not stringent enough. The other 12 Senators be-

lieve that the bill gives increased responsibility to the States to develop and implement air quality improvement and maintenance programs and that the bill reasonably balances economic and social necessities with environmental enhancement.

The most significant argument against this proposed standard is that there has not been a more thorough study of its practical applications. On the other hand, the very people making that complaint have failed to produce factual data supporting their views.

Where does all of this leave us? As so often seems to be the case in this suboptimal world, we must make important decisions without a lot of facts we wish we could have. One fact, however, is certain: We must take responsible action since the alternative—no action—is unacceptable. What were our choices?

The choice we made today was the Randolph amendment to approve the bill while also requiring the National Commission on Air Quality to prepare within 2 years a comprehensive study showing the effects of the nondeterioration standard. If unreasonable effects are shown, then prompt action should be taken to amend the statute as appropriate.

Another alternative would have been to delay a vote upon passage of the bill until after receipt and analysis of a more thorough study. Other alternatives would have been to approve or reject the bill now.

Finally, there was always the alternative of debating and debating until it was too late to take any action until the next legislative session.

However, a far sounder resolution has been to approve the bill while requiring the more thorough study designed by Senator Randolph. This realistic approach represents a significant step forward in reconciling some knotty dilemmas while also requiring further thoughtful factual analysis. This approach encourages progress and clear thinking about the significant problems which we, as a society, must resolve. No one seems pleased with the present state of unresolved confusion. Thus, let us go forward with this balanced Randolph approach to the significant deterioration problem with the hope that wisdom will be used to apply it so as to carry out the fundamental purposes underlying the Clean Air Act.

Mr. TUNNEY. Millions of Californians suffer from the effects of some of the worst air pollution in the country. Southern California, and particularly the South Coast Air Basin, is in a special situation because of air pollution hazards peculiar to the region. Geographical characteristics and widespread reliance on the private automobile combine to form a major source of this pollution. The problem in California has been developing for years, and lately at an accelerating pace despite efforts to produce nonpolluting and energy-efficient cars and trucks. Clearly we must do all in our power to halt the despoilation of the air we breathe. Health officials inform us that the increasing levels of smog will mean a public health threat because of increased respiratory illnesses. Business leaders say that deteriorating air quality is having a deleterious effect on important segments of the California economy.

In 1970, the Clean Air Act established a national goal "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." At the time that this national policy was established, the Congress was well aware that an integral element to the realization

of this goal was the curbing of automobile emissions. For this reason, the 1970 Clean Air Act articulated stringent auto emission performance standards, and put the auto industry on notice that these standards were to be achieved in accordance with a definite timetable.

The Clean Air Act of 1970 mandated a 90 percent reduction from 1971 emission levels in three pollutants emitted from automobiles, by 1975 for hydrocarbons and carbon monoxide and by 1976 for nitrogen oxides. The resultant standards reflecting those percentage reductions are: 0.41 gram per mile hydrocarbons, 3.4 grams per mile carbon monoxide, 0.4 gram per mile nitrogen oxide. As a result of two 1-year postponements by the Administrator of the Environmental Protection Agency and one congressional delay of a year, the deadline is now 1978 for achievement of the original statutory auto emissions standards.

The pending clean air amendments (S. 3219) modify the original 0.4 gram/mile  $\text{NO}_x$  standard to 1.0 gram/mile which must be met by 1980 on all cars, and by 10 percent of all cars produced in 1979. The 0.4 gram/mile  $\text{NO}_x$  level becomes a research objective to which auto manufacturers must build demonstration vehicles on an annual basis. S. 3219 also provides for an extension of the compliance deadlines for hydrocarbons and carbon monoxide from 1978 to 1979.

I agree with a recent editorial which appeared in a California newspaper. The editorial states that "America is not going to win the war against air pollution if Congress takes the backward step of relaxing automobile emission standards."

We have learned much during the last several years about the adverse effects of pollutants on our society and its economy, and we have made considerable progress in emission control technology, both as to effectiveness and as to minimizing costs and unwarranted side effects. Unfortunately, most of this progress has only taken place due to stringent governmental standards imposed over the objections of those having an obvious economic incentive to resist controls and to continue to impose costs of pollution on the general public.

The chairman of the California Air Resources Board has analyzed the auto emission provisions of S. 3219 in order to determine their impact on California. He has brought the following key findings to my attention:

... the schedule proposed for passenger car emission standards is unnecessarily lax considering the progress which has been made in automobile emission control technology and California's experience with more stringent standards. ... Most of the arguments against tougher emissions standards are based on alleged fuel penalty. Although significant penalties have been observed in past years, this is no longer the case. For example, when we moved to more stringent standards in California in 1975, fuel economy actually improved by an average of about 15 percent. We had further improvements this year. And our tests of prototype 1977 California models, which must meet much tougher emission standards, indicate that fuel economy will improve again—this time about 5 percent—despite the stricter requirements.

For the 1976 model year, Californians suffer about a 5 percent fuel penalty when compared to cars sold in other states. This margin will narrow somewhat next year even though we will have the more stringent standards. The message is clear: as the manufacturers have been required to meet more stringent standards in California, marketplace competition has forced the automakers to develop more efficient systems which have little or no fuel penalty.

Rather than attempting to maintain strong antimog requirements, S. 3219 proposes to relax the auto emission compliance schedule in order to accommodate Detroit car manufacturers. If the language that

is currently in the Public Works Committee bill is approved, it will adversely compromise the achievements that have already been made in California. The argument behind the committee's bill is that industry cannot produce a fuel-efficient car that meets the existing clean air goals. The facts belie this line of reasoning.

As Senator Hart has reported, Volvo has developed a nearly pollution-free car which even gets 10 percent better gas mileage than current models. The Environmental Protection Agency and the California Air Resources Board have both tested and verified these positive results. Volvo will produce these cars for sale in California later this year. The reluctance of U.S. auto manufacturers to achieve similar breakthroughs can be traced to the economics of auto emission pollution.

In the jargon of the economist, air pollution is nothing more than a low-cost—or no-cost—form of waste disposal. However, those who wish to use the air for artificially low-cost waste dumping are, in effect, asking for a subsidy which imposes significant economic and other costs on their fellow citizens and other businesses. Emission controls amount to a requirement that sources begin to internalize the costs of waste disposal, and that those who purchase the goods and services produced pay such costs rather than impose them on the remainder of society. When viewed in this light, those who oppose a strong Clean Air Act on the ground that the issue is the environment against the economy have oversimplified the matter in a way that threatens to dangerously mislead those who must act in the public interest.

S. 3219 would relax 1978 Federal emissions standards in two critical areas: it would delay the compliance deadline for all automobile emission standards, and it would substantially relax the nitrogen oxide standard. Thus, S. 3219 would not require until 1979, hydrocarbon and carbon monoxide emission standards that are being achieved in California today. More importantly, S. 3219 would not require until 1980 a nitrogen oxide emission standard that is six times weaker than levels now being achieved in California. It is absolutely imperative that the committee's proposed rollbacks be rejected if we are truly committed to promoting the production of nonpolluting cars.

Senator Hart (of Colorado) has prepared two amendments which will reiterate and reinstate legislative language that expresses the determination of the Senate to foster the production and use of clean automobiles. First, amendment No. 1608 would require manufacturers to comply with automobile emission standards 1 year earlier than set out in S. 3219. Specifically, the amendment moves up the compliance schedule by requiring the proposed 1979 standards be met in 1978, and the proposed 1980 standards be met in 1979.

The second amendment, No. 1609, would require automobiles produced in 1982, and thereafter to meet a nitrogen oxide standard of 0.41 gram per mile. This amendment would keep the NO<sub>x</sub> emission control standard as it exists in current law, but delay compliance for 4 years, from 1978 to 1982. This modification will allow automobile manufacturers time to perfect emission control technology without abandoning standards that are necessary for protection of public health.

It is vitally important to California, and the Nation, that my colleagues join me in support of the two amendments offered by Senator Hart.

The Senator from Colorado (Mr. Gary Hart) proposes an amendment numbered 1608.

The amendment is as follows:

On page 65, line 11, strike "1979" and insert in lieu thereof "1978".

On page 65, lines 13 and 14, strike "1977, and 1978" and insert in lieu thereof "and 1977".

On page 65, line 23, strike "1978, and 1979" and insert in lieu thereof "and 1978".

On page 66, line 1, strike "model year 1980 and thereafter" and insert in lieu thereof "model year 1979 and thereafter".

On page 66, lines 10, 13, 16, and 19, strike "1979" and insert in lieu thereof "1978".

On page 66, line 12, strike "1980" and insert in lieu thereof "1979".

## SENATE DEBATE ON S. 3219, AUGUST 5, 1976

The ACTING PRESIDENT pro tempore. The pending question is on agreeing to the amendment by the Senator from Colorado (No. 1608).

The Senator from Colorado (Mr. Gary Hart) proposes an amendment numbered 1608.

The amendment is as follows:

On page 65, line 11, strike "1979" and insert in lieu thereof "1978".

On page 65, lines 13 and 14, strike "1977, and 1978" and insert in lieu thereof "and 1977".

On page 65, line 23, strike "1978, and 1979" and insert in lieu thereof "and 1978".

On page 66, line 1, strike "model year 1980 and thereafter" and insert in lieu thereof "model year 1979 and thereafter".

On page 66, lines 10, 13, 16, and 19, strike "1979" and insert in lieu thereof "1978".

On page 66, line 12, strike "1980" and insert in lieu thereof "1979".

Mr. GARY HART. The first amendment, No. 1608, would require manufacturers of automobiles to comply with automobile emission standards 1 year earlier than set out in S. 3219. Specifically, the amendment moves up the compliance schedule by requiring that the proposed 1979 standards be met in 1978 and that the proposed 1980 standards be met in 1979. The automobile manufacturers already have demonstrated that they can meet these emission standards, and in my judgment, the additional year delays proposed in S. 3219 are unwarranted. [See Sec. 202]

What are the standards, and when would various approaches require them to be met?

First of all, there are three pollutants which the law contemplates reducing. Those are hydrocarbons, carbon monoxide, and nitrogen oxide. Under present law, in 1976 the standards for hydrocarbons are 1.5 grams per mile; carbon monoxide, 15 grams per mile; nitrogen oxide, 3.1 grams per mile. In 1977, that standard remains the same, except that nitrogen oxides are reduced to 2 grams per mile. In 1978, hydrocarbons would be reduced to 0.41 gram per mile; carbon monoxide, 3.4 grams per mile; nitrogen oxide, 0.4 gram per mile.

Those standards remain the same for all following years, under current law. S. 3219 provides the following standards: hydrocarbons, 1.4 grams per mile in 1976; carbon monoxide, 15 grams per mile; nitrogen oxide, 3.1 grams per mile. In 1977 the standards would stay the same for hydrocarbons and carbon monoxide. The nitrogen oxide standard would go to 2 grams per mile.

That standard would be kept until 1979, at which time hydrocarbons would be reduced to 0.41 gram per mile; carbon monoxide to 3.4 grams per mile. Ninety percent of the cars sold in the United States would be required to achieve a nitrogen oxide level of 2 grams per mile, and

10 percent of those cars sold in the United States would have to achieve 1 gram per mile of nitrogen oxide.

That standard of 0.41 for hydrocarbons, 3.4 for carbon monoxide and 1 for nitrogen oxide, would remain the standard for all following years under the committee bill.

The amendment I offer, No. 1608, would provide the following change in the committee bill:

The standards would remain the same for 1976 and 1977.

In 1978, my amendment would require 90 percent of the cars in the United States to achieve a 0.41 gram per mile standard for hydrocarbons, a 3.4 grams per mile standard for carbon monoxide, and a 2 grams per mile standard for nitrogen oxide. Ten percent of the cars sold in this country in 1978 would have to meet the same standard for hydrocarbons and carbon monoxide of 0.41 gram per mile and 3.4 grams per mile, however these cars would be required to reach a standard of 1 gram per mile for nitrogen oxide, the same as the committee proposal for 1979. That is to say, the committee standards would have to be met 1 year earlier.

Under my amendment, in 1979 all cars in the United States would have to meet a standard of 0.4 gram per mile for hydrocarbons, 3.4 grams per mile for carbon monoxide, and 1 gram per mile for nitrogen oxide. That would remain the same for 1979, 1980, and 1981, the same as the committee bill.

However, the significant difference in 1982 is that my amendment No. 1609, which we will discuss later, would mandate the following standards for all automobiles sold in the United States: 0.4 gram per mile for hydrocarbons, 3.4 grams per mile for carbon monoxide, and 0.4 gram per mile for nitrogen oxide, or the same standards proposed under current law. We will come later to the difference of 0.4 gram per mile for the nitrogen oxide standard in amendment 1609, so I will not discuss that during this period. What I will discuss is the justification for moving the compliance dates 1 year earlier than the committee proposes for all auto emissions—hydrocarbons, carbon monoxide, and nitrogen oxide.

This entire argument gets down to one simple phrase, and that is "technology feasibility." Can the automobile manufacturers achieve the standards which we set forward, and on which I agree with the committee: but can they achieve them 1 year earlier and thus save substantial public health damage in this country according to the technology capabilities they presently have?

The National Academy of Sciences, in a report dated June 5, 1975, lists four technologies which could be employed to meet the 0.4 NO<sub>x</sub> standard and the other standards which the committee proposes, and to meet those in the model years and in the calendar years I have suggested.

What are those four technologies? First of all, there is the so-called three-way catalyst technology, similar to the one used by Volvo for their 1977 California cars. That is the device which I have on my desk. This technology costs between \$25 and \$50. It meets not only the standards set forward by the State of California but also the standards set forward in my two amendments taken together, and can meet them today; not 4 years from now, not 6 years from now, not 8 years from now.

The second technology which is available, according to the National Academy of Sciences, is the CVCC technology, a prechamber, dual-carburetor stratified charged engine oxidation catalyst, which the National Academy of Sciences says also can meet these standards and meet them in the calendar years proposed in my amendment.

The third technology available is the so-called CCS, a direct fuel injected, stratified charged engine with an oxidation catalyst.

The fourth technology is the so-called dual catalyst, using a standard engine with oxidizing and reducing catalysts.

In the report dated June 5, 1975, by the National Academy of Sciences, there is the following statement:

Emission standards for hydrocarbons and carbon monoxide—

Namely, 0.41 gram per mile and 4 grams per mile.

for 1978 and subsequent model year light-duty vehicles should be maintained at the current statutory levels.

Namely, what was in the law at that time and what I am proposing.

Attaining those levels by 1978 is both feasible and worthwhile. It is probably feasible with catalyst technology to achieve the statutory emission standards for  $\text{NO}_x$  or nitrogen oxide.

That is, the 0.4 gram per mile in 1978.

There would be less uncertainty today if there had not been a slackening of effort in pursuing this goal.

That is from a National Academy of Sciences report of the Conference on Air Quality and Automobile Emission of June 5, 1975, page 1.

In a March 1975 statement by EPA Administrator Russell Train, and according to his 1975 decision on the 1977 suspension of new motor vehicle standards, Mr. Train made the same finding with regard to meeting the hydrocarbon and carbon monoxide standards in 1977. He said in a report of the National Academy of Science:

Giving a fair reading indicates that the technology to meet the statutory standards is available. My own staff reaches the same result. I thus find that catalyst technology exists and could be applied to meet the statutory hydrocarbon and carbon monoxide emission levels on a very large proportion of automobiles by 1977.

That is a quotation from a decision of the Administrator of the EPA, March 5, 1975, page 8.

The California Institute of Technology Jet Propulsion Laboratory conducted a \$500,000 study entitled, "Should We Have a New Engine?" That was funded by the Ford Motor Co. This study stated, at page 82:

The conventional auto or present engine can be improved to meet those statutory emission standards and even with a small gain of 10 percent in fuel economy over present levels, without considering non-engine changes to improve fuel economy—

That is an independent study conducted on behalf of the Ford Motor Co.

It has been stated that these standards cannot be met with present technology except on fairly exotic automobiles. The actual experience in California—which has been, as all members of the Committee on Public Works and most Members of the Senate know, attempting to deal with severe problems of auto emissions for many years—shows

that cars in all weight classes on the road in California today are already achieving emission levels at or very near the standards which I am proposing be met in the model years contained in my amendment despite their requirement to meet higher standards than those contained in these amendments. Nevertheless, the committee bill presently before the Senate would not require that those standards be met until 1980, even though the State of California and a wide variety of models on the road today in California are meeting higher standards.

What are some of those models and what can they achieve? These are American models available at any automobile dealer in this country. The GM Chevette, which is a four-cylinder engine, with a road weight of 2,250 pounds, is meeting the following standards in California: 0.47 gram per mile hydrocarbons, 5.84 grams per mile carbon monoxide, 0.81 gram per mile nitrogen oxide.

Ford Pinto, 1975, four-cylinder engine, 3,000-pound road weight: 0.2 gram hydrocarbons; 2.8 grams carbon monoxide; 0.9 gram nitrogen oxide standards.

Ford Comet, V-8 engine, road weight 3,500 pounds, which is about the average weight of most American automobiles: 0.64 gram per mile hydrocarbon; 5.08 grams per mile carbon monoxide; 0.91 gram nitrogen oxide standards.

The list grows. On GM Buick Skylark, 3,500 pounds road weight; 0.59 gram per mile hydrocarbons; 5.12 grams per mile carbon monoxide; 1.2 grams per mile nitrogen oxide.

Ford Ranchero, which, it is my understanding, is a small or medium-sized station wagon model, V-8 engine, road weight of 4,500 pounds; 0.35 gram per mile hydrocarbons; 3.69 grams per mile carbon monoxide; 0.97 gram per mile nitrogen oxide.

General Motors Chevelle Malibu, V-8 engine; AMC Matador, V-8 engine; Chrysler V-8 engine, road weight of 5,500 pounds; General Motors Cadillac, a 500-horsepower V-8 engine automobile, also weighing 5,500 pounds, all of which either obtain or closely approximate the standards which we are proposing for the model years of 1979 and 1980.

I think it is significant that the above results which I have introduced into the Record and results which were described by the California Air Resources Board were achieved without employing any advance control systems, including the dual catalyst and three-way catalyst which were recommended by the National Academy of Sciences and other organizations as the most effective and efficient means of meeting the statutory standards.

In an Automotive News article on the Wankel rotary engine breakthrough technology that was achieved in 1975, that engine is described as follows:

The rotary engine can achieve the 0.4 gram per mile nitrogen oxide standard while maintaining fuel economy.

That article also said:

Automakers now have the capability to produce this engine and could employ the low NO<sub>x</sub> design by 1978 and 1979. They also said that limited production may be possible by mid-1977 for California.

The argument has been made that even if these standards could be met, even if present technology of the sort which I have outlined could be achieved by domestic automotive manufacturers, we cannot

force them to do this because it is going to result in fuel inefficiency at a time when we have shortages of energy in this country. The facts are otherwise. As the data provided by the State of California will regard to its certification of the Volvo engine clearly show, these standards can be met with the technology that I have here in my hand today, without sacrifice of fuel efficiency.

The data provided by the State of California in its tests of the Volvo engine certified for the coming model year shows those standards which I am proposing be met, according to the timetable in my amendment 1608, can be met with a net fuel gain of 10 percent.

I quote from a letter which I have provided my colleagues addressed to me dated May 26, 1976, from Mr. Tom Quinn, chairman of the Air Resources Board of the State of California. He says:

Besides comfortably meeting the 90% reduction standards of the Clean Air Act Amendments of 1970, the new Volvo system also results in a 10% fuel economy *improvement* over the 1976 Volvo models sold in both California and other States.

Mr. RANDOLPH. For the record I would like to have the Senator tell the Senate if the Volvo is now manufactured in the United States.

Mr. GARY HART. The automobile itself is manufactured abroad. The converter system which I have here is manufactured in New Jersey.

Mr. RANDOLPH. There is no assembly within this country of the Volvo; is that correct?

Mr. GARY HART. I have no information to that effect. But, of course, there is assembly of this device, which is what we have under consideration here.

Mr. RANDOLPH. The reason for this inquiry is that I have read in recent days of their opening of a plant in this country. I just wondered if there was any information the Senator had on that issue.

I think constantly of these matters that come before us with regard to foreign manufactured cars. There is a tendency to bring the cars of these companies into the United States for manufacture. This is a rather significant situation.

Mr. GARY HART. That, in my judgment, does not relate to the question of whether the device is available on those cars which could also be put on American-manufactured cars actually built in this country.

In fact, the Ford Automobile Co. has announced plans to use a similar control device, based upon the three-way catalytic converter which I have here, on its 1978 Pintos which will be sold in the State of California. So apparently this device has some attraction for domestic automobile manufacturers.

The key component of the Volvo system that we are discussing here, as I have indicated, is this new catalytic converter developed by Engelhard Industries of Edison, N.J.

This catalyst simultaneously reduces hydrocarbons, carbon monoxide, and the nitrogen oxide emissions, while the engine is tuned for nearly optimum fuel economy and driveability.

It has been alleged that this will only work on a fuel injection system. The Senator from Colorado understands that the same technology can be readily adapted to a conventional kind of carburetor used in most American automobiles. This fact has been attested to by the California Air Resources Board.

Volvo currently uses this Engelhard catalyst in conjunction with a fuel injection system.

However, according to Chairman Tom Quinn of the Air Resources Board in California, the system can also be used on conventional carburetor systems, and it is my understanding that that effort is underway at the present time.

I would like to quote from a letter from the Governor of California, addressed to all Members of the Senate, July 6, 1976. In that letter, which urges support for my amendments, both 1608 and 1609, for achieving these standards earlier, in the case of the cancer-producing nitrogen oxide emission, Governor Brown makes the following statements:

The steps taken by the House version of the Clean Air Act and the Senate versions are being proposed because of arguments that the automobile industry cannot produce a fuel-efficient car that meets the current clear air goals.

Governor Brown says the following:

That argument is not true. One manufacturer, Volvo, has already developed a nearly pollution free automobile with a 10 percent fuel economy improvement over current models.

Governor Brown continues:

The Detroit auto makers have made only one argument against the three-way catalyst system . . . alleging that an adequate supply of the catalysts will not be available.

And that argument has been made to our committee, that there are not enough of these to go around.

Our State Air Resource Board has investigated that claim and has concluded that an adequate supply can be manufactured.

He concludes by saying:

I urge you to support the amendments being offered by Senator Hart and Members of the House. These amendments will provide the industry with additional lead time to meet the statutory standards, while minimizing the damage caused by postponement by imposing interim levels which have already been proven feasible in California.

To sum up the arguments made by the automobile industry—they have said that the device I hold in my hand does not work. They have testified before the Senate Public Works Committee that what is being done in the State of California cannot be done in this country. I think this device proves that testimony false.

What we really have to decide in the Senate today is whether the Congress of the United States is going to make a commitment to the American people to clean up the pollution in the air produced by automobiles in this country. That is what the argument is all about.

We can postpone, we can accept arguments that we cannot tighten up air quality standards because of economy and energy, and all the rest of it; but those arguments are false. The standards can be met, and they can be met in the years proposed in my amendments, and it is just a question of will, on the part of the U.S. Senate and the House of Representatives, to stand behind the American people and reach some reasonable public health standards in this country.

Mr. BUCKLEY. I believe that Senator Hart, as he did during the committee considerations, has outlined effectively the arguments for advancing by 1 year the schedules for compliance that we have in our bill.

Given the fact that we are talking about a 1-year acceleration of the same standards, I think that it can hardly be argued that the committee bill is anything other than a commitment to clean air.

We heard the arguments thoroughly in committee. We discussed them over an extended period of time. I believe that every member of the Committee on Public Works has demonstrated that he is committed to effective pollution control; and I believe that is what this bill accomplishes.

But we must recognize that certain mechanical factors inhibit what can be accomplished in a realistic way by as cumbersome an industry as the automotive industry.

I believe we have reached a reasonable accommodation of all the important factors, and one that will move us on a steadfast course to the point that in 1980 the automobile will have been eliminated as a significant source of pollution in this country.

I must, therefore, oppose this amendment. I believe that the timetable in the bill is the most expeditious and practical one for phasing in the clean-air standards.

We must recognize that the industry is now entering the certification stage for the 1978 model cars. That means that the industry is close to locking in its designs and models that will go on sale in the fall of 1977. I do not think it is practical to expect the industry to achieve in the 1978 cars full statutory compliance in control of hydrocarbons and carbon monoxide and control of 10 percent of the cars at a level of 1.0 NO<sub>x</sub>. Time just does not exist for the necessary tooling, I believe.

I am convinced that the industry can reasonably achieve these levels of control for the 1979 model year and it was for that reason that I sponsored an amendment to require full statutory control on hydrocarbons and carbon monoxide in model year 1979. I intend to do what I can to assure that such a level of control is achieved.

The near unanimity of action within the committee on this existing timetable is proof enough that the fears, expressed by environmentalists, that somehow or other we will later make an indefinitely postponement of the goals delineated in this legislation, simply have no validity.

Mr. DOMENICI. Let me commend the Senator from Colorado. We happen to disagree on this particular occasion, but merely as to the timing and how fast we should push the technology. I think his conduct in the committee and his effort here on the floor is evidence of the entire committee's desire that we push standards that force new technology. That is what we are talking about here today. Our disagreement is over how fast can we expect that push on accelerated technology to appear in the American automobile fleet.

How quickly can we expect it to be there in a workmanlike manner and in a manner that will continue to supply reliable automobiles and energy-efficient automobiles?

Let me make two comments with reference to the Senator from Colorado's statement.

First of all, he properly quoted from a letter dated May 26 directed to the Senator from Colorado from Tom Quinn. He properly quoted Mr. Quinn in saying that the new three-way catalyst will, indeed, be

an energy saver. That is correct. But the important part of this letter is the conclusion that Mr. Quinn arrives at in the last paragraph.

In that, he recommends the schedule that he would impose based upon this new technology, and I believe that the Senate should know that he is not recommending, that we use the schedule recommended by Senator Hart's amendment.

To the contrary, he recommends that in 1978 it be 2 grams of  $\text{NO}_x$ , in 1979 1.5  $\text{NO}_x$ , and in 1980 that it be 1.5  $\text{NO}_x$ .

So the expert who is being quoted here, who has the experience in California and who says that the new three-way catalyst might be a technological breakthrough for the entire fleet, is recommending in 1980 an  $\text{NO}_x$  level of 1.5.

The committee in its bill is recommending 1.0  $\text{NO}_x$  in 1980 and is insisting that our automobile manufacturers in 1979 produce 10 percent of the fleet at 1.0  $\text{NO}_x$ . The technology is there. We can get to 1.0  $\text{NO}_x$  in 1980.

Likewise, I would like to correct any misunderstanding as to the position of EPA. My friend from Colorado quoted from them. I would like to quote them from a more current communication, March 6, 1976—not 1975, but 1976.

They stated that the standards of 0.41, 3.4, and 1.0  $\text{NO}_x$  could only be met in model year 1979 on a limited number of vehicles. But even this would entail a high-risk effort for the manufacturers since this is not enough time to run one development fleet.

I want to make these few comments for my fellow Senators. I hope they understand what Senator Buckley said. The committee is not recommending we get off the automobile manufacturers' backs.

The committee is recommending a persistent, constant push for new technology and, as a matter of fact, we have pushed well beyond that which the automobile manufacturers tell us they can do. But we feel they can do it. We will have them down to 1.0  $\text{NO}_x$  in 1980 under our schedule, and that is well beyond what they want to do.

For 1979 and 1980, the 2.0 with 10 percent at 1.0, and all of them at 1.0 in 1980, will provide for 1979 and 1980 a cleaner fleet than that recommended by the head of the Air Control Commission of California, since he is recommending 1.5 for both years.

So I do not want any Senators to think the committee in its schedule is not pushing, and insisting that  $\text{NO}_x$  is one of those pollutants we want to clean up.

We are not satisfied with existing catalysts and technology. As a matter of fact, we are pushing them to new thresholds. We will get there in 1980, and I believe that this schedule is realistic.

I have some written comments of why the Volvo technology, which is the heart of the Hart amendment, cannot be assumed to be available in 1979 for the entire American fleet. I think it speaks for itself.

The basic technology has only been tried on the Volvo. We cannot expect 7 million to 10 million American automobiles—not even any assembly here of that product—to instantly go to it 1 year hence.

Yet we are going to push them to have 10 percent on it the year after next, and perhaps all of them using some new technology in 1980.

So, I speak in opposition to Senator Hart's amendment 1608. Basically, Senator Hart's amendment would accelerate the committee bill's automobile emission timetable by 1 year. The linchpin of Senator Hart's argument for such an acceleration lies in the performance of

an isolated number of cars in the California certification test. First, there were a handful of cars that approached the present Senate standards during the 1976 California certification. Then, more recently, during the 1977 California certification, a Volvo met all the present statutory standards, including 0.4 NO<sub>x</sub>.

On the basis of the Volvo results, Senator Hart is willing to require that the entire U.S. car fleet attempt to meet in 1979 standards the committee believes more appropriate for 1980. Prior to listing my concerns with such an accelerated pace, I think it important to note that Mr. Quinn, chairman of the California Air Resources Board, has also counseled a more cautious approach. In fact, for 1980, he recommends national standards less stringent than the Senate standards. I feel Mr. Quinn's concerns closely parallel my own. In the press release on the Volvo test results, Mr. Quinn was cited as being concerned with the time lag needed by the manufacturers to adapt the three-way catalyst to the complete automobile fleet. Rather than nitpick at this amendment, I would just like to list those reasons that lead me to adopt a similarly cautious view with respect to the Volvo results:

First. The Volvo certified only a four cylinder car. They have not officially tried a six cylinder. This would lead one to reasonably surmise that on a vehicle with a dual exhaust manifold, such as six and eight cylinder cars, additional difficulties may be encountered.

Second. The Volvo employed fuel injection. This is presently a rarity among U.S. cars. It also involves considerable expense.

Third. California test procedures are not comparable with Federal test procedures. California test procedures allow violations of the standards during durability runs: Federal procedures do not. Accordingly, the Volvo and other spectacular results during California certification may not be possible under Federal test procedures.

In citing the above difficulties, I do not want to take anything away from Volvo's and Eglehard's achievements. They have clearly vindicated Senator Muskie's faith in the possibility of technological innovation. They have also vindicated his tenacity. For that, the Nation owes him a permanent debt. Nevertheless, I must disagree with those who feel that caution can be flung to the winds; that the Volvo experience has provided us with a final answer.

In the final analysis, I am just incapable of the leap of faith implicit in Senator Hart's amendment. On the basis of one four cylinder, fuel injection automobile tested under nonconforming test procedures, I am not willing to commit the entire U.S. auto industry to an accelerated time frame.

Mr. McCURE. I voted in the committee to leave the ultimate standards at the strict levels that have already been established because I believe that ultimately we can attain those very strict standards. We should, therefore, maintain them as goals.

I did, however, vote in the committee for a slower schedule for achieving those standards in the interim years, to allow us the opportunity to perceive alternative technological strategies, believing, as I do, it will result in a greater variety of approaches toward the ultimate progress we seek.

The question of whether or not the Volvo has, indeed, achieved the ultimate, final goal, I think, is the only new element that can be injected into the debate.

It has been suggested that Volvo has achieved this breakthrough. But it is interesting to know that Volvo does not claim that. It is only those who claim it for Volvo who are saying that this new technology not only is proven, but is available and can be applied.

Volvo cautioned, according to the information that has come to me, the chairman of the air board in California not to issue the press release, which he did issue, because they could not sustain it and he could not sustain it.

But despite that caution, and for reasons which I best leave to be conjecture of someone else, Mr. Quinn issued the press release and said that the Volvo did achieve what Volvo itself will not claim.

I think one of the shortcomings of this entire question is that we translate what a prototype looks like into the assurance that a production run will achieve the things claimed and hoped for the prototype.

One of the issues that must be discussed is cost. Volvo's own figures show that this will add another \$272 per unit for the cost of basic fuel injection. If we are going to tell the people of this country that this is what we are going to do, we ought to tell them what the cost is going to be for the automobile they purchase.

The sensor system itself must be replaced every 15,000 miles. That is another charge of about \$15. The catalyst probably would have a life expectancy of 50,000 miles. Probably, I say, because no one knows. It has been stated that there are no adverse effects from the catalyst. Let me remind the Members of the Senate that there were a number of people, including myself, who said that the current catalyst was going to cause some sulfate emission problems. That caution that was given over 2 years ago was pooh-poohed by many. But, as a matter of fact, it does have that problem. We are moving to solve it, but it does have that problem.

Let me then raise, in that context, the caution that has been suggested with respect to the three-way catalyst.

I do not know whether it is true, but let me just report to the Senate, so we at least have some of the facts on the other side before us as we make the decision.

There are detectable amounts of ammonia produced by the three-way catalyst. As the catalyst life nears its end, the quantity of ammonia emissions increase to rather significantly larger quantities than when the catalyst is new.

There are detectable quantities of hydrogen cyanide produced from the three-way catalyst. As if we do not have enough problems, this is the large HC, not the small hc. This "hydrogen cyanide" should not be confused with "hydrocarbon."

So there are some problems associated with the three-way catalyst that we need to solve. I am not suggesting that it is not a promising technology or that we should not pursue it.

Let me also mention the fact of the limitations on the supply of rhodium. There is only a very small amount—0.016 ounces—per catalyst. But there are only 130,000 ounces of rhodium produced worldwide. If we are going to get into the production of 10 million units, just for the first year of production, and then repeat them on an annual basis, it is obvious to see what will happen to the world's supply of rhodium. I will point to Greens commodity market comments, volume 11, No. 15, issued July 28, 1976, in which they point to the tremendous price

volatility in rhodium already, with increases on the price of rhodium from \$220 per ounce to \$425 per ounce, even in advance of any tremendous consumption of rhodium. I think it is easily predictable that the price of rhodium will go clear out of sight. If that does happen, we can see what that will do not only to availability but also to the price of the commodity, and the price of the finished product, although, again, there is only 0.016 ounces per catalyst.

The price of rhodium is not a very large measure of the cost per unit. It does have something to do with our balance of payments, however, as we seek to get the rhodium supplies, most of which come from outside the United States and which will continue to come from outside the United States. So it will have another adverse impact.

Again, this is not to suggest this is not a promising technology; I think it is. But let us not oversell it. Let us not overlook the fact that the oxygen-sensing system works well on a straight in-line four-cylinder engine. But Volvo itself says they have problems if they try to apply it to a Vee configuration. If we are going to do this, we will move immediately to scrap all of the Vee engines and move to a straight in-line engine. The production capacity in the domestic car market is simply not there to move that rapidly on the 1978 models.

Remembering the time lag that we have in the production of automobiles, they are moving now into prototype testing. They will have to deliver the prototype to EPA for the EPA tests almost immediately on the 1978 models. There simply is not time to do what the Senator from Colorado suggests, as desirable as it may be, and even if we overlook a number of the other problems associated with this development.

I think it is time to put it into context because the publicity is far greater than the real opportunities for progress that can be proved and sustained in this field.

Mr. GARY HART. Each of the allegations made by the Senator from Idaho can be and have been responded to, I believe, technically and in every way possible by the California Resources Board. I ask to have those responses to the statements made by the Senator from Idaho printed in the Record.

#### CALIFORNIA AIR RESOURCES BOARD COMMENTS IN RESPONSE TO CRITICISMS OF THE THREE-WAY CATALYST SYSTEM

1. It has been stated that "... EPA disqualifies a car exceeding federal standards at any point of the 50,000 mile run" and that the California Air Resources Board (ARB) requires only that average emission levels over 50,000 miles meet the standards. Both of these statements are incorrect. Both EPA and ARB require that the emission levels of the 4,000 mile "data cars" meet the standards at 50,000 miles when multiplied by the deterioration factor established by the "durability cars" which must run 50,000 miles.

A major difference between the durability cars and the data cars is that the durability cars have the basic system to be sold but the data cars are required to be more similar to the actual production vehicles from the standpoint of test, weight, calibration, etc. Compliance is based on the emission levels of the data cars adjusted by the deterioration shown with the durability cars. The only difference between the way ARB and EPA evaluate a system's performance is that EPA requires that a straight line fit through the durability car data points (by the method of least squares) never exceed the standards while ARB allows the line to exceed the standards if the calibrations to be used in production produce low enough emission levels so that the cars are projected to meet the standards throughout 50,000 miles of use. EPA does not disqualify a vehicle for exceeding the standards once during the durability test as has been claimed.

Using full EPA procedures, the Volvos would have certified at the statutory levels of 0.41 gpm hydrocarbon and 0.4 gpm  $\text{NO}_x$ . The statutory CO standard of 3.4 gpm would have been exceeded by .4 gpm. It is clear from the performance of the data cars, however, that rerunning a durability car using the same calibrations used with the data cars would allow the 3.4 gpm CO level to also be met.

2. On the issue of adaptability of 3-way catalyst systems to Vee type engines, there is no reason to anticipate any significant engineering problems in this area. Volvo has in fact, confirmed in writing (letter attached) to the ARB that they intend to certify a Vee configuration engine for 1978. At worst we expect the Vee configuration to require one additional oxygen sensor (about \$5 cost to the manufacturer) and minor electronic circuitry changes.

3. Regarding the availability of noble metals for 3-way catalysts, the ARB has investigated this situation with both catalyst manufacturers and the suppliers of the raw materials. Rustenburg Mines has informed us (letter attached) that their own reserves are sufficient to supply the anticipated 1980 world usage rate for 50 years. Rustenburg would prefer to supply platinum (Pt) and rhodium (Rh) in the ratio of 1 to .055, which is the naturally occurring ratio. Both Engelhard and Matthey-Bishop have related data which indicate acceptable 3-way catalyst performance is possible with no more than this 5½% Rh content.

Concern has also been expressed over problems with ruthenium (Ru) availability for 3-way catalysts. Many 3-way catalysts use none. Ruthenium naturally occurs at about 9% of the platinum level and no good 3-way catalyst that the ARB has heard about uses this much.

While Rustenburg's deposits are substantial there are other sources of noble metals as well. International Nickel Company processes noble metal as a by-product of their nickel mining in Canada and the Soviet Union also process noble metals from the same source. The most encouraging information to date, however, is that Johns-Manville has discovered a prospect in Montana. Several years' effort already expended to locate the richest deposits in the area may result in mining operations within one year according to a representative of Johns-Manville.

4. On the issue of oxygen sensor life, Volvo has recommended 15,000 mile change intervals but the same sensor is now being certification tested with 30,000 mile change intervals. Since the sensor is easily changed, intervals of this length may be acceptable but longer service intervals may be possible in the near future.

5. "Unregulated pollutants" from 3-way catalyst systems has also been discussed as a possible cause for concern. All tests indicate, however, that the 3-way system may have fewer unregulated pollutants than current vehicles or uncontrolled engines. The sulfuric acid emission levels associated with conventional oxidation catalysts are not a problem with 3-way. EPA has measured 3-way catalysts for unregulated pollutants like hydrogen cyanide and found that even when the fuel system is adjusted to fail in the "rich" mode the levels produced are not harmful. If an oxygen sensor fails or is removed from the system the fuel system becomes lean in actual use. In this case only  $\text{NO}_x$  control is lost and no unregulated pollutants present a problem.

6. The cost of the 3-way approach will probably only exceed the cost of current control systems significantly if fuel injection is required in which case the EPA has estimated<sup>1</sup> a cost of \$190.00 would be typical. The use of carburetors, however, appears feasible based on preliminary tests reported by Engelhard. With the use of carburetors some cars may actually realize a cost reduction.

Mr. GARY HART. Is there any doubt in the mind of any Senator, or any person in this country, that we would have made any improvement whatsoever in the quality of the air in this country if we had left the automobile manufacturers to their own devices to voluntarily clean up air quality and achieve air quality? I think the answer any reasonable person would give is "No." The automobile manufacturers have responded to one thing and one thing only: that is pressure from the American people through their elected officials in the Congress. That is why we are here today.

<sup>1</sup> Automobile Emission Control—The Technical Status and Outlook as of December 1974, Emission Control Technology Division, U.S. EPA, January, 1975. (A \$250 fuel injection system cost plus a \$20 oxygen sensor cost plus a \$20 catalyst premium is offset by a \$40 cost reduction for deletion of EGR, a \$40 cost for deletion of air injection, a \$15 cost for deletion of quick heat manifolding, a \$5 cost for deletion of spark retard control).

The question which the opponents of this amendment have not answered is: Why should we delay if the capability exists? What are the reasons?

There have been some rather limp suggestions, I may say, that this is difficult for the automobile manufacturers.

Well, my heart bleeds for them. One of the major manufacturers reported net profits in the last quarter of some \$900 million. That is really difficult for them to have to live with that situation.

They can hire the best scientists in the world. They can achieve anything that is technologically feasible. If nothing else, this demonstrates that it is technologically feasible. There is only one thing missing. That is the pressure of the law. Only the pressure of the law is going to require automobile manufacturers to make the improvements that the American people want. That is the issue.

There has been the suggestion about the committee reaching reasonable accommodation and achieving what is expeditious and practical.

I think the American people are fed up with that kind of talk. They want action. They want results. They are tired of breathing dirty air. That is what this amendment is all about.

We are talking about serious public health problems. Issues of the appearance of the air in the 1960's have become serious issues of public health in the 1970's.

What is wrong with the Congress that we will not move, that we will not respond to the pressure of the people we represent? It is because the people who show up in the committee hearings to testify are the automobile manufacturers who are making literally billions of dollars every quarter in profits. Representatives of the labor movement are afraid they might lose some jobs if they have to install this device on cars. They are the people who want delay.

I think the American people have had enough of that. The question is, are the automobile manufacturers dragging their feet or are they not?

To quote the National Academy of Science:

There has been an apparent reluctance on the part of the manufacturers to assemble in a demonstration vehicle the component emissions control technologies which the manufacturers have in hand. In this way, they can maintain with some consistency that the required technology "has not been demonstrated."

Of course, it has not been demonstrated if they will not try it.

The Administrator of the EPA, Mr. Train, said the following:

I have heard that the mere fact that I wrote a letter to the Congress suggesting that a lower standard of certain emission controls be met has the result of killing off research and development by the automobile manufacturers on how to meet higher, tighter standards. I would suspect it is probably true because the deadlines in the statutory standards are in there for the purpose of forcing technology.

He says further:

I am reasonably sure that given the competitive reason and other reasons, the automobile industry is not going to be doing things that it does not have to do in terms of meeting regulatory standards.

That is what the issue is all about.

Mr. MUSKIE. I ask to have printed in the Record certain material relating to the amendment of the Senator from Colorado (Mr. Gary Hart).

## MATERIAL RELATING TO AMENDMENT 1608

The Committee's decision to provide the industry with more time did not rest principally on technical feasibility, but rather on the question of economic recovery, fuel economy and sulfates.

## ECONOMIC CONDITION OF THE AUTOMOBILE INDUSTRY

On this first point, it is fair to say that the auto industry is well on the road to recovery. Dark projections of permanent industry depression were vastly overstated. Suggestions that the domestic auto industry would suffer permanent retrenchment have been replaced by new statistics indicating that an upturn has occurred. These suggest that the industry will once again have a good sales year this year (better than 10 million car sales), and that new sales records will be set by 1980. The upward trend is evident already.

Industry sales as of December 1975 were up 30 percent over those of a year earlier. According to the Journal of Commerce, retail sales are expected to exceed the 1973 record of over 11 million units by 1977 or 1978, and should rise to over 13 million units before the end of this decade. In fact, Elliott M. Estes, President of General Motors, predicts that in 1980, "the auto industry can reasonably look forward to the sale of 16 million new cars and trucks."

The dire statistics presented by industry spokesmen as a basis for relaxing emission requirements have also undergone a metamorphosis. Long-term layoffs of auto workers were down to about 65,000 industry wide in January, 1976, compared to 275,000 in February, 1975, as reported in the January 26 New York Times. According to the April 19 edition of the New York Times, "Industry analysts believe that—barring a strike by the United Automobile Workers next fall—1976 will surely become the third biggest sales year in automobile history." That same story went on to quote GM's chief economist as stating "We could even begin to approach the second best year."

I submit that these facts and projections are evidence that the cleanup of dirty cars to protect our citizens' health need not be foregone in the interest of jobs and the economy.

## FUEL ECONOMY

Since the energy crisis there has been a great deal of discussion of the need for fuel economy in automobiles and the relation between fuel economy and emission standards. Last year, the Congress passed a bill mandating a 43 percent improvement in fuel economy by 1980, with further gains to be achieved thereafter. Meanwhile, in response to the call from President Ford for a 40 percent improvement in fuel economy, the automobile manufacturers have called for a five-year freeze of 1975 emission standards, in order to make it easier to reach the fuel economy goal.

The automobile manufacturers have projected figures for various emission requirements which suggest a loss of fuel economy of 15 percent or more if they must meet the 1980 standards adopted by the Committee.

However, EPA has stated on several occasions that "there is no inherent relationship between exhaust emission standards and fuel economy." In numerous mark-up sessions dating from nearly a year ago, the Subcommittee on Environmental Pollution and the Committee on Public Works has attempted to resolve these conflicting views.

The Senate Commerce Committee, in preparing the fuel economy bill last year, also was concerned whether their new fuel economy standards would take away the possibility of meeting emission standards. Although the Commerce Committee included a provision in the bill for fuel economy standards to be relaxed if necessary in order to maintain the momentum toward clean air, their basic assessment was that both goals, can be reached, as stated in their report:

"The essential point is, given an adequate commitment on the part of the automobile industry, the 21 mile per gallon industrywide average set as a goal for model year 1980 (50 percent improvement over 1974) can be achieved with any of the hydrocarbon and carbon monoxide emission standards currently under discussion, and at most, with only slight relaxation of the statutory (0.4 g/mi) nitrogen oxide standards."

The Commerce Committee went on to comment that it was far from clear whether any relaxation is necessary, and cited a study prepared by the Federal Energy Administration which showed that, even with the present sales mix of vehicle size, up to 21 miles per gallon could be achieved as a new car fuel

economy average in 1980 under the assumption that full statutory standards would be implemented in 1978, including the 0.4 gram nitrogen oxide standard (which this bill proposed to relax to 1.0 grams/mile).

The fact is that the actual fuel economy depends on the choice of technology. It is hard to say this any better than EPA did in their 1975 Technology Report:

"With a fixed emission control system fuel economy is a function of the degree of emission control required . . . With a fixed level of fuel economy, the degree of emission control achievable depends on the type of control technology used."

We have recently had an example of this. The tightening of the emission standards in 1975 had a favorable impact on fuel economy, which improved 14 percent over 1974. Now the 1976 model cars obtain 26 percent better gas mileage than the 1974 models, while continuing to meet more stringent emission standards.

In assessing claims and counter-claims about fuel economy, the Committee felt the need for information from an objective source outside the automobile industry. The National Academy of Sciences Committee on Motor Vehicle Emissions is such a source, and has studied this issue carefully. The Academy has estimated that present statutory standards, even including the 0.4 gram per mile nitrogen oxide standard—which has been made a research objective by this bill—could be met with catalyst technology with a fuel penalty of 2 percent less. Even that small penalty would be lessened with the relaxed 1.0 gram of  $\text{NO}_x$  standard in this bill.

The Academy reaffirmed this assessment in their June 5, 1975 report, which stated that "emission standards for HC and CO (.41 and 3.4 grams per mile) for the 1978 and subsequent year light duty vehicles should be maintained at the current statutory levels. Attaining these levels by 1978 is both feasible and worthwhile. These levels can be achieved while steps are taken to insure against excessive emissions of sulfuric acid and acid sulfates." The Academy said that "these goals could, and should, be achieved while improving fuel economy."

The Academy participants in the June 1975 report were not of one mind as to whether the marginal benefits of achieving the statutory emission standard of 0.4  $\text{NO}_x$  in 1978 exceeded the marginal cost. They did, however, state that "it is probably feasible with catalyst technology to achieve . . . 0.4 grams per mile  $\text{NO}_x$  in 1978."

That same report comments that as the technology is developed further, the use of exhaust gas recirculation may not be required and even the estimated 2 percent loss in fuel economy could probably be removed.

A study performed by the Jet Propulsion Laboratory at California Institute of Technology for the Ford Motor Company and released last August concluded that goals for emission reduction and energy conservation for the automobile over the next five to ten years could be met with improvement in the conventional engine and to the vehicle.

Thus, the Committee was left with the task of devising a set of standards that would meet the clean air goals and that would result in forcing, insofar as possible, the industry to adopt fuel-efficient technology.

The Committee discussed establishing a 1.5  $\text{NO}_x$  standard as the statutory standard. This was rejected as not adequate to protect public health and not likely to lead to the introduction of new, improved technology. The report discusses the basis for this decision on page 60. The new 1.0 gram per mile  $\text{NO}_x$  standard is expected to require an improved level of technological development with fuel economy benefits.

To a certain extent, fuel economy is red herring in this debate. One cannot help but wonder what excuse the industry would have used in order to request further delays if it had not been provided with a conveniently available energy crisis.

It is quite clear that vehicle weight and engine displacement, not emission standards, are the most important factors in determining fuel economy. Well over half the gasoline used by automobiles is used by large and specialty cars, cars which almost always have more weight than is necessary to carry out their task. The report by the Department of Transportation and the Environmental Protection Agency entitled "Potential for Motor Vehicle Fuel Economy Improvement—Report to Congress" and dated October 24, 1974, identified methods for improving fuel economy by over 40% with no change in engine design concepts or emission controls whatsoever.

Another opportunity for fuel economy improvement that is often discussed is the diesel engine. The 1.0 gram  $\text{NO}_x$  standard proposed in this bill can be met by the diesel if the industry wishes to do so. A Peugeot diesel has already achieved an average of 1.07 grams per mile of nitrogen oxide in five tests with 25 miles per

gallon. The National Academy's June 1975 report concluded that the diesel is one example of an engine that offers substantial fuel economy benefits at standards down to 1.0 gram per mile. An EPA study of the diesel as a light duty power plant concluded that the diesel could meet a 1 gram per mile standard for nitrogen oxides.

The most recent automobile emission control status report released by EPA in April, 1976 confirms the Committee's judgment that statutory emission standards can be met with good fuel economy. According to this report, the single most important problem in meeting low emissions with good fuel economy is hydrocarbon emissions—not  $\text{NO}_x$  as has been alleged by the industry for five years. The report specifically identified two of the many systems using combinations of available technology such as improved catalyst, start catalyst, port liners, and sonic exhaust gas recirculation which "could be considered to make the good fuel economy engine calibrations achieve hydrocarbon levels low enough to have a high confidence of certifying at a 0.41 hydrocarbon standard."

In considering the two goals of fuel economy and improved air quality, we must remember that fuel economy is salable. The individual customer will demand it, and the industry will deliver it, especially since passage of the fuel economy bill last year. Emission control, which has a significant value to the general public, has less value to the individual user. It is not a sales item which the customer will demand, so public policy must require it or it will not be provided. The evidence the Committee has gathered indicates that it needs to be done, that it can be done, and that it can be done without sacrificing fuel economy goals. The bill as reported is designed to do just that.

#### AUTOMOTIVE SULFATES

As I said earlier, the Committee considered and rejected, as a basis for a moratorium on auto emission standards, the potential harm of sulfate emissions from catalyst-equipped automobiles. After three years of concentrated study of various aspects of the issue by the government, industrial, and academic communities, there remains a great deal of uncertainty and disagreement as to the potential scope of the automotive sulfate problem.

Concern by the possibility that excess oxygen from air pumps increases the conversion of fuel sulfur into sulfate within the oxidation catalyst system, the Committee extended the 1977 interim standards of 1.5 HC, 15 CO, and 2.0  $\text{NO}_x$  through 1978, rather than mandating the current (1975-76) California standards of 0.9 HC, 9.0 CO, 2.0  $\text{NO}_x$  which are currently being met with wide use of air pumps and oxidation catalysts. The likelihood that no new technology would be employed at these levels nationally was one reason for going directly to the 0.41 HC, 3.4 CO standards in 1979 to encourage the use of technology which would not exacerbate the sulfate problem.

The bill also authorizes a one-year study on the measurement of sulfur emissions from mobile sources, the health impacts of such emission, and the control options available. It is important to note that under section 211 of existing law, the Administrator can require the desulfurization of fuel should data on these unknowns indicate an immediate need for control of sulfate emissions prior to the implementation of a sulfate emission standard. This was precisely the strategy proposed by Administrator Train in November, 1973, when he determined that the sulfate controversy did not warrant deferral of the auto clean-up schedule or prohibition of the use of catalyst.

Also, it is important to note that the Administrator has determined tentatively that the sulfate emissions from non-catalyst cars and non-air pump catalyst cars are similarly low. This modifies his March, 1975 position that even without an air pump, catalyst cars appeared to emit substantially more sulfate than non-catalyst cars. The high estimates of sulfate emissions from air pump catalyst cars remain unchanged.

In fact, according to the most recent data from EPA, non-catalyst vehicles, catalyst vehicles without air pumps, and 3-way catalyst equipped vehicles have similar sulfate emission.

1. While the position taken in this amendment was credible almost a year ago, the auto industry has done very little in the meantime. According to the most recent EPA technical report on automobile emission control, dated April, 1977, "Development of emission control technology has slowed down from last years pace." Regardless of who gets the blame for the slowdown, this means that precious lead time has been lost. 1977 cars are now being certified, and tooling

is already being ordered for the 1978 models. By the time this bill becomes law, it would be practically impossible to change 1978 production plans without a major disruption of the industry.

2. That study concludes that the 1979 standards of S. 3219 (.41 HC, 3.4 CO, 2.0 NO<sub>x</sub>) could be met on 47 percent to 80 percent of the population without catalyst change and 64 percent to 100 percent within the 1978-79 time frame. Thus, we are pushing the technology to get 100 percent compliance in 1979, and 1978 would be unrealistic.

3. The EPA technical report does not support implementing stringent standards on all production before 1980, or on major portion of production before 1979. The statutory 1980 standards of S. 3219 (.41 HC, 3.4 CO, 1.0 NO<sub>x</sub>) could "only be met in model year 1979 on a limited number of vehicles" according to EPA. But even this would entail a high risk effort for the manufacturers since there is now only time to run one development fleet. Under S. 3119, we are asking them to take that risk in 1979 on 10 percent of production. The Hart amendment would require taking the risk on 100 percent, which is excessive.

4. The EPA study also indicates that even meeting tight standards on part of production in 1979 and all of production in 1980 will require manufacturers development efforts to be increased over what is being done now. This does not leave much hope for speeding up the time schedule. Hart amendment would do.

#### AMENDMENT NO. 1609

Under the previous order the Senate will now proceed to the consideration of amendment No. 1609 which the clerk will state.

The assistant legislative clerk read as follows:

The Senator from Colorado (Mr. Hart) proposes amendment No. 1609.

On page 66, line 1, strike "and", and line 4, strike the period after "mile" and insert in lieu thereof the following: ", and model 1982 and thereafter shall contain standards which provide that such emission from such vehicles and engines may not exceed 0.4 gram per mile."

Mr. GARY HART. Amendment 1609 is directly related to the previous amendment. Amendment 1609 very simply states that the standard for nitrogen oxide should be reduced to 0.4 gram per mile and that that standard should be met by 1982. This is the standard presently in the current law. S. 3219 raises that standard from 0.4 gram per mile to 1 gram per mile. Why is this important?

Why is nitrogen oxide important?

It gets down to a very simple point—public health.

The National Academy of Sciences has found that relaxation of this 0.4 nitrogen oxide standard could preclude some large cities and locations downwind from those cities from meeting the ambient oxidant standards.

One of the most preeminent scientists, Dr. Auckenschmitt, who discovered that auto exhaust causes the smog which results in much of the public health problem that we have in many of our cities, announced at the National Academy of Sciences in May 5, 1975, conference on auto emissions, that the strategy of only reducing hydrocarbons to control the oxidant levels is wrong and that smog-filled air is not going to get clean unless we control oxides of nitrogen.

That is exactly what this amendment is all about.

That same expert went on to state that the necessary control of nitrogen oxide would require a motor vehicle emission standard of no higher than the 0.4 to 0.6 gram per mile.

That, in a nutshell, is the essence of my amendment.

The stringent control of any nitrogen oxide emissions will also probably be needed to attain and maintain the 1-hour ambient standard recommended by the National Academy of Sciences.

In March 1976, the Department of Transportation released a five-agency panel report on air quality which projected the health impact of the various auto standards over the period 1980 to the year 2000.

Significant differences exist over the period 1980 to 2000 for respiratory attacks in children. Projected by continuing with the current 3.1 grams per mile nitrogen oxide emission standard versus implementing either a 2 grams per mile standard for the statutory 0.4 gram per mile standard. For the total health impact between the 1980 and year 2000 period, a 37-percent improvement is projected for the 2 grams per mile standard. That is to say, if we go from the present 3.1 standard down to the 2.1 grams per mile standard we will improve the rate of the respiratory attacks on children in that 20-year period by 37 percent.

The statutory standard of 0.4 gram per mile is projected to provide a 53-percent improvement in respiratory attacks in children during that 20-year period.

The benefits of implementing the 0.4 gram per mile standard are significant. As a 69-percent reduction in those respiratory attacks is projected when the 0.4 gram per mile standard is compared with the present nitrogen oxide emission standard.

Those statements are documented in the five agency report by the Federal Government in March 1976.

After conducting a year-long study by Congress on air quality and automobile emission controls, the National Academy of Sciences concluded in September 1974:

Automobile emissions may account for as much as one-quarter of one percent of the total urban health hazard, for the whole U.S. urban population. Effects of this magnitude might represent as many as 4,000 deaths and 4 million illness-restricted days per year. 4,000 deaths is about one-eighth of the deaths from bronchitis, emphysema, and asthma combined, or one-twelfth of the deaths from automobile accidents. 4 million days of illness is nearly equivalent to one-tenth of the total number of days lost from work each year because of respiratory illness.

Taking into consideration both property damage and health cost, the National Academy went on to point out that annual benefits between 2.5 billion and 10 billion dollars in 1973 dollars could be attained by reducing automobile emissions to the statutory levels required to attain ambient air quality standards for the automobile pollutants.

Regardless of the improvement in the cost element of achieving these standards, what we are talking about here are human lives, and although it is important to consider the cost of installing devices such as this on automobiles to achieve these standards, how can we judge the cost of a \$25 or \$50 instrument such as this on automobiles against the loss of human lives and the loss of human productivity? Particularly, how can you judge that cost against the damage done to the lungs of the children of this country? That is what this issue is all about.

Control of  $\text{NO}_x$  auto emissions to 90 percent will help minimize the health threat of more dangerous derivative pollutants, nitrosamines.

Recently, researchers have found the highly carcinogenic dimethyl nitrosamine present in the ambient air of Baltimore, Philadelphia and Belle, W. Va. German researchers have found the nitrosamines to be formed from secondary amines and  $\text{NO}_2$  in the ambient air, with the nitrosamine concentration depending upon the ambient  $\text{NO}_2$  levels

and not the amine levels. Then, in July 1974, EPA found, "As a family of carcinogens, the nitrosamines have no equals"—Environmental Protection Agency, "Summary Report on Atmospheric Nitrates" 9, 91 (1974). EPA stated that there is substantial evidence that cancer occurs more frequently in urban areas than in nonurban areas, and that this may be due to air pollution. EPA stated that "a possible role for nitrosamines—in the increased cancer rates—should be investigated when and if they are detected in the atmosphere"—the same at 91.

What that means, in plain, ordinary English, is that what we are putting in the tanks of our automobiles in this country produces cancer more readily than almost any other element in our environment. That is what this issue is all about.

I could go on and on with the studies that have been conducted across this country in city after city. They are documented in the Record. They are replete in the record of the Committee on Public Works. What they they add up to is one thing: By not controlling the amount of nitrogen oxides in the air which are produced by the automobile engine, we are producing cancer in the lungs and in the bodies of American citizens. That is what this issue is all about.

We can talk about accommodation. We can talk about working things out with the automobile industry. We can talk about reasonable efforts. We can talk about methodical performance and getting there on some sort of timetable that accommodates all interests—the labor unions and the automobile manufacturers. But what does that mean to the American citizen whose lungs are being contaminated and who is getting cancer from this?

We can achieve the 0.4 NO<sub>x</sub> standard. There is no doubt in the public record or in my mind. The question is, Will we? That is the issue before the Senate.

Mr. WEICKER. I support the amendment of the junior Senator from Colorado (Mr. Gary Hart).

We have industry rising to one of its lowest moments when, in effect, what it says is, "We can get more energy if only you will free us from the pollution standards which have been set in order to achieve clean air in this country." American industry wants to go running back to the past, to the pollution that existed.

What they are saying is that no sacrifice is demanded of the American people. "If we can only convince them to accept the lower pollution standards, then you will get more energy." But, of course, the bottom line of that is that you will get more energy in return for lives. You are going to make a swap. That is a fine point for this country to arrive at. All of us do not have to change our lifestyles. We do not have to make sacrifices. We are going to have a few older Americans, a few infirm Americans, go by the boards. That is exactly what the swap is. The reason why it is proposed is that it does not affect us. No sacrifice is being demanded.

It used to be, when we confronted a national crisis, that every one of us would take the burden on our shoulders in this country; and the better off you were, the more of the burden you took. Apparently, that is not the answer any longer. In the case of air pollution, "You die or get injured," so that the rest of us can do our thing unchanged.

As the greatest nation in the world, I suggest that we each start to behave like the greatest individual in the world, and that is when the

tough ones go ahead and charge into it. We do not buck off the problem on somebody else, and we do not close our eyes. That is why I am supporting the distinguished Senator from Colorado. What I am saying and what he is saying is that if you want more energy, find other ways to achieve it. Do not sacrifice lives.

I am glad that the fight is being led by the distinguished Senator from Colorado. He has a lot of clean air in his State. I do not have much in mine. It is not a matter of self-interest. It might be logical for a Senator from New York or from New Jersey or from Connecticut to propose this amendment, but it was proposed by a Senator who comes from a State where there is plenty of clean air compared to what we have in the Northeast.

Going back a short span of time, certainly within the last decade, nobody ever heard of a pollution alert in the Northeast; nobody ever heard of a heat inversion. Yet, I believe that every year in the last 10 years we can track more heat inversions and more pollution alerts. That is not just something we hear on the radio. If those alerts take place, people are going to die and be injured.

When Congress passed the original Clean Air Act in 1970, 6 years ago, specific emission limits for three auto tailpipe pollutants were to be achieved in 1975 and 1976. In the following 6 years, Congress has delayed those emission standards three times. Consequently, we are discussing today the fourth retrenchment from statutory auto emission standards in 6 years. We are debating whether the original standards set for 1975 on carbon monoxide and hydrocarbons will be met in 1979, and whether the original nitrogen oxide emission standards will be loosened considerably and even those new standards not be met until 1980.

Meanwhile, clean air will remain a hope for the future; once again, Congress will reward Detroit for its negligence. Volvo is manufacturing cars that meet not only our national clean air standards, but also the State standards in California which are six times stronger. Moreover, gas mileage is better. The results are in: clean air and good mileage can be a reality for 1978 automobiles.

When Congress enacted the Clean Air Act in 1970, it recognized a national health hazard. Since that time, numerous studies have confirmed the strong relationship between auto emissions and respiratory illness and death.

In its September 1974 report to Congress, the National Academy of Sciences stated:

Automobile emissions may account for as much as one quarter of one percent of the total urban health hazard. For the whole U.S. urban population, effects of this magnitude might represent as many as 4,000 deaths and 4 million illness-restricted days per year. Four thousand deaths is about one eighth of the deaths from bronchitis, emphysema, and asthma combined, or one twelfth of the deaths from automobile accidents. Four million days of illness is nearly equivalent to one tenth the total number of days lost from work each year because of respiratory illness.

In Connecticut, clean air means life versus death for more than a few citizens. It means activity rather than confinement for thousands more. Yet, even in light of that harsh truth, the Hart amendments would simply require auto manufacturers to comply with automobile emission standards 1 year earlier than set out in S. 3219 and require that the current nitric oxide standard be met by 1982.

The time to stop the environmental backslide is now. Passage of the Hart amendments will demonstrate to the Nation Congress continued resolve for a clean environment.

Let no one be fooled: The achievement of the goals set forth by Congress in 1970 will be difficult and sacrifice will be required. Yet, failure to adopt the Hart amendments will have its price. Considering both property damage and health cost, the National Academy of Science estimated that \$3 to \$12 billion could be solved if statutory auto emission standards are attained.

As far as Detroit is concerned—I saw the quarterly profits of General Motors—\$900 million on profits. That is great. I am for the free enterprise system. I have tried to defend it many times and save it from attacks it is under today. But when they generate those kinds of profits, to sit here and whine when it comes to maintaining clean air and acting in an enlightened way on behalf of their fellow citizens, they do not seem to hack it very well. I think they are a disgrace.

I do not care about the designs. I care about living, and my children and my parents. If they are going to live, that is going to be far more important than any hunk of metal Detroit sells.

Mr. GARY HART. The reasons I am offering this amendment is a very selfish one. I wish the air in my own State were clean, as the Senator from Connecticut said about his State. But in Denver through September 1974, nitrogen oxide 1-hour levels exceeded those recommended 1-hour standards 56 times. During January 1974 alone, recommended 2-hour levels were exceeded 218 times in Denver, Colo. I am as selfish about the air quality in the State of Colorado as the Senator from Connecticut is about his own State.

Mr. HASKELL. I have a couple of questions for my colleague on his amendment. He asked that automobile emissions be controlled quicker, I believe, than the committee asks. We all know that the automobile is the prime polluter of our atmosphere. As I understand it, the technology to meet the standards set forth in amendments Nos. 1608 and 1609 exists and is in place. Am I correct in that?

Mr. GARY HART. The Senator is exactly correct. This information became available to Congress and the American people after completion of the work on the Senate bill that we presently have before us. It essentially is in the form of the object I hold in my hand, which is the device, the so-called three-way catalytic converter, used on the Volvo automobile certified by the State of California to meet standards we have set here for the next model year. That information came to us because the State of California only released it within the last 30 to 60 days. I think it substantially alters the basis for the committee's position. Detroit says there is no such object as the one that I hold in my hand, but here it is.

Mr. HASKELL. As I understand it, the Senator has said that the Volvo exceeds the standards that the Senator would mandate in his amendment. I wonder if that device put on the Volvo is some esoteric device made in some far distant country under a patent, where it would not be available to our manufacturers—General Motors, Chrysler, and the like. Could the Senator enlighten me as to where that converter is made?

Mr. GARY HART. The patent stamp on this device, which is attributed to Engelhard Industries and called an exhaust gas purifier, shows that this is made in Newark, N.J.

The argument has been made that even if such a device as this existed, it does not exist in sufficient quantities for American consumption, that we just produce too many automobiles, and that industry could not make enough of these to put on American cars. I have introduced statements in the Record to the contrary—that, in fact, we could produce enough of these in the country to meet American needs.

Mr. HASKELL. The device is not very large, nor would it appear to me to be a very complex manufacturing job once they have the molds. I assume that Engelhard has the molds or they would not be making them for Volvo.

Mr. GARY HART. I think the Senator is absolutely correct. There is also the question about price. People say, "Well, American people will not pay that much to put this on their cars, and they are not that interested in their health." As a matter of fact, this technology is available for between \$25 and \$50. I think the people we represent from the State of Colorado are perfectly willing to pay this minimal amount to protect their lungs.

Mr. HASKELL. I would agree that the citizens of our State and the citizens throughout the Nation would certainly do that to protect their health and the health of their friends and family, and also to prevent the very significant property damage that occurs by virtue of pollutants in the air.

One more question: People who oppose controlling automobile emissions say that anytime you put some kind of a catalytic converter on a machine, you cause the automobile to get many fewer miles per gallon.

I wondered if my colleague had any information as to the mileage performance of Volvo with this catalytic converter on it.

Mr. GARY HART. I will repeat this information in documents provided by the State of California.

The chairman of the California Air Resources Board, Mr. Quinn, in a letter to me dated May 26, 1976, says:

The new Volvo system also results in a 10 percent fuel economy improvement over the 1976 Volvo models sold in both California and other States.

The Governor of California, in a letter to all Senators dated July 6, 1976, says that these pollution control levels are reached, and that Volvo, has already developed a nearly pollution-free automobile with a 10-percent fuel economy improvement over current models.

The Senator also asked whether the standards we are debating here were met by this system. Mr. Quinn, in the letter of May 26, 1976, provides the following data: automatic transmission car, 3,000 pound test weight, achieves standards of 0.22 hydrocarbon, 2.9 carbon monoxide, and 0.08 nitrogen oxide. That is better by a factor, 5 than the standard proposed by the Senator from Colorado.

People say, "What about a bigger car?"

On an automatic transmission car weighing 3,500 pounds, which is about the average American automobile, the levels achieved by this system are 0.17 gram per mile hydrocarbons; 2.4 grams per mile carbon monoxide; and 0.17 gram per mile nitrogen oxide. That is better by almost a factor of 3—than the standards proposed by the Senator from Colorado for 1982—not for next year, but for 1982.

I ask to add as a cosponsor to my amendments 1608 and 1609 the Senator from New Hampshire (Mr. Durkin).

MR. CRANSTON. I rise to testify as a Senator from California that what has been said in the course of debate as to what has been accomplished in California is absolutely accurate. I support both amendments 1608 and 1609.

Amendment 1609 retains the "statutory" nitrogen oxide standard of 0.4 gram per mile established in the 1970 Clean Air Act, but delays implementation from 1978 to 1982. The committee bill, which I am otherwise supporting, unfortunately provides for a permanent relaxation of the  $\text{NO}_x$  standard from 0.4 to 1 gram per mile. I think that is a very unwise provision.

This relaxation of the tougher  $\text{NO}_x$  standard is being proposed because of arguments advanced by the automobile manufacturers that a  $\text{NO}_x$  standard below the current 1.5 grams per mile level cannot be achieved without incurring major penalties in fuel economy and driveability.

We now know this to be a false argument. During May 1976, Volvo completed certification testing requirements on a new "3-way" catalyst system, developed in cooperation with Englehard Industries of Edison, N.J. This new 3-way catalyst system provides for the first time the catalytic control of nitrogen oxides while at the same time meeting the 90-percent reduction requirements of the 1970 act and achieving a 10-percent improvement in fuel economy.

Volvo has thus provided us with concrete proof that the toughest emission standards ever established by the Congress can be achieved by a conventional automobile that is comfortable, roomy, and driveable—and this can be done while still achieving a substantial improvement in fuel economy. Even the station wagon version of the 1977 Volvo exceeded the 20-mile-per-gallon standard which the Congress has established for 1980.

I also wish to indicate my support for amendment No. 1608, which requires the auto manufacturers to meet emission standards for carbon monoxide, nitrogen oxides, and hydrocarbons 1 year earlier than proposed in the committee bill.

The standards proposed under this amendment for 1978 have already been achieved on 1976 cars being sold in California. And the 1977 Volvos—certified for sale in California—have achieved a substantially lower level of pollution than the levels proposed in the committee bill.

And these tough emission standards have been achieved with a 10-percent gain in fuel economy.

The Governor of California—the Honorable Edmund G. Brown, Jr.—has written to me urging support for the Hart amendments in the Senate and the Waxman-Maguire amendments in the House.

I ask that Governor Brown's letter to me dated July 6, 1976, be printed in the Record together with a factsheet on the 1977 Volvo 3-way catalyst system prepared by the California Air Resources Board. (See exhibit 1.)

MR. CRANSTON. Given the obvious fact that economical technology exists to meet the more stringent standards proposed in the Hart amendments, there is simply no justification for delaying our efforts to improve air quality.

## EXHIBIT 1

STATE OF CALIFORNIA,  
GOVERNOR'S OFFICE,  
Sacramento, July 6, 1976.

HON. ALAN CRANSTON,  
Member of the Senate, Senate Office Building, Washington, D.C.

DEAR ALAN: The Congress will soon be taking up the Clean Air Act Amendments of 1976. A major provision of both the Senate and House versions of the bill is a relaxation of the automobile emission standards. I am writing to ask your assistance in maintaining stringent automotive anti-smog requirements.

As you probably know, the current House version of the bill would delay full compliance with the "statutory" standards until 1985, and the Senate version would entirely remove the requirement for full control of oxides of nitrogen ( $\text{NO}_x$ ). These steps are being proposed because of arguments that the automobile industry cannot produce a fuel-efficient car that meets the current clean air goals. That argument is not true. One manufacturer, Volvo, has already developed a nearly pollution-free automobile with a 10 percent fuel economy improvement over current models. For your information, I am enclosing a brief fact sheet on the new Volvo. This car, designed to meet California's 1977 vehicle standards, has been fully tested by both the California Air Resources Board and the U.S. Environmental Protection Agency, and it will go on sale in California later this year. We have also been informed that Ford intends to use a similar emissions control system, based on a "three-way" catalytic converter, on the 1978 Pinto models manufactured for California.

The Detroit automakers have made only one argument against the "three-way" catalyst system—alleging that an adequate supply of the catalysts will not be available. Our state Air Resources Board has investigated that claim and concluded that an adequate supply can be manufactured.

In view of the clear need for further auto emissions controls if our clean air standards are ever to be met and the demonstrated capability to manufacture a car meeting the current statutory requirements, I urge you to support the amendments being offered by Congressmen Waxman and Maguire and Senator Hart. These amendments will provide the industry with additional lead time to meet the statutory standards, while minimizing the damage caused by postponement by imposing interim levels which have already proven feasible in California.

Sincerely,

EDMUND G. BROWN, JR.,  
Governor.

CALIFORNIA AIR RESOURCES BOARD FACT SHEET, 1977 VOLVO THREE-WAY  
CATALYST AUTOMOBILES

During May of 1976, Volvo completed certification testing requirements on a new "3-way" catalyst system, developed in cooperation with Engelhard Industries of Edison, New Jersey. The new system, which has been developed for all of Volvo's four cylinder models, will be the first ever to catalytically control nitrogen oxides ( $\text{NO}_x$ ) emissions from production cars. Not only did the 3-way system meet California's stringent 1977 emission standards, it also comfortably met the 90% reduction statutory standards established by the Clean Air Act Amendments of 1970 while achieving higher fuel economy than the 1976 "49-state" Volvos, which emit far more pollution.

The tests performed on the Volvos by the U.S. Environmental Protection Agency are conclusive proof that the toughest emission goals ever established by Congress can now be met by a roomy automobile with a conventional engine and excellent fuel economy. Even the station wagon version of the Volvo exceeded the 20 mile per gallon fuel economy standard which the Congress has established for 1980.

Until now catalytic converters have been used only to control hydrocarbon (HC) and carbon monoxide (CO) exhaust emission. Without catalytic control of  $\text{NO}_x$  available, automobile manufacturers have claimed that  $\text{NO}_x$  emission standards below the 1.5 grams per mile (gpm) level established by the California Air Resources Board (ARB) for 1977 models would be impossible to achieve without major penalties in fuel economy and driveability. Volvo, in fact, believed that the use of a catalyst that could control  $\text{NO}_x$  as well as HC and CO would allow improved fuel economy at the 1.5 gpm  $\text{NO}_x$  standard established

by the ARB. Other manufacturers did not attempt to certify a 3-way catalyst system for 1977 because previous experience with 3-way catalysts had shown them to deteriorate rapidly in one a few thousand miles. Engelhard Industries has, however, now discovered new methods of catalyst formulation and fuel metering which eliminate that problem.

The HC and CO emission levels from the Volvo system was actually lower after 50,000 miles of durability testing than at 4,000 miles. NO<sub>x</sub> emissions were only 14% higher at 50,000 miles than at 4,000 miles. The table below summarizes the emissions and fuel economy performance of the new system.

	Exhaust emissions (grams/mile)			Fuel economy (miles/gallon)		
	HC	CO	NO <sub>x</sub>	City	Highway	Combined
Average of 4 Volvo test cars, including 50,000-mile deterioration factor.....	0.20	2.8	0.17	18.2	22.1	21.6
Clean Air Act goals.....	.41	3.4	.40	-----	-----	-----
1977 California standards.....	.41	9.0	1.50	-----	-----	-----
Current (1976) Federal standards.....	1.50	15.0	3.10	-----	-----	-----

The 3-way catalyst system is nearly indistinguishable from the oxidation catalyst system used on current automobiles. The catalyst construction is the same as current catalysts with only the chemical composition being modified slightly. In addition to the tiny amounts of platinum used in current catalysts, 3-way catalysts often contain rhodium in trace quantities. A key system difference from current oxidation catalyst systems is the use of an exhaust composition sensor which signals the fuel-metering system to change slightly should the exhaust become too rich or too lean for optimum catalyst efficiency. The system can be made to work with either fuel injection or carburetors. Recent discoveries in the area of the catalyst's fuel-metering requirements make it likely that the more precise control offered by fuel injection will be unnecessary. The anticipated cost increase for the 3-way catalyst and the exhaust sensor is \$25-\$50.

Three-way catalysts have already undergone extensive tests for "unregulated" pollutants. Auto exhaust contains literally hundreds of harmful compounds, only some of which are regulated. Many of these compounds are unregulated because their concentration is insignificant from a health-effects viewpoint. These compounds include aldehyde, sulfuric acid, hydrogen cyanide, particulate matter, etc. Of all systems tested to date, the 3-way catalyst system may be the lowest in unregulated pollutants. The system reduces many of the unregulated compounds. Higher sulfuric acid levels, which have been a concern with oxidation catalysts, are not a problem with 3-way catalysts. All other compounds remain at safe levels even under "failure modes" of system operation.

Volvo has reported to the ARB that it may extend the use of the 3-way system to its entire model line for 1978 even though the system provides far more emissions control than is required by state or federal law. The ARB has estimated that by 1981 all cars could use the 3-way system to meet the 0.4 gpm NO<sub>x</sub> standard if the Congress recommitts the Nation to the goal of producing clean cars.

To permit an orderly phase-in of the technology now available to meet the Clean Air Act's goals, the ARB is recommending the following schedule be adopted by the Congress:

Model year	HC	CO	NO <sub>x</sub>
1978.....	0.9	9.0	2.0
1979-80.....	.41	9.0	1.5
1981.....	.41	3.4	.4

Cars sold in California have met the standards recommended nationally for 1978 since 1975, and 1977 California cars will all meet the standards recommended nationally for 1979-80.

Since the initial release of the Volvo test results by the ARB, there have been statements made by certain automobile manufacturers that 3-way catalyst systems may not be practical for most manufacturers because of claimed cost problems with accurate fuel-metering equipment and availability problems with

materials for 3-way catalysts. ARB is aware of considerable work currently underway by auto manufacturers and carburetor manufacturers on feedback-controlled carburetors which have high potential for providing sufficiently accurate fuel control without the use of more expensive fuel injection systems. AC Division of General Motors is one of the leaders in the development of low cost exhaust oxygen sensors which can be used to control a relatively inexpensive carburetor. It does not seem reasonable at this time to assume expensive hardware will be required to make 3-way catalyst systems work.

On the issue of catalyst availability, the ARB has corresponded with both catalyst manufacturers and suppliers of the raw materials used to manufacture the catalyst. ARB has concluded that efficient 3-way catalysts can be concluded manufactured using the noble metals platinum and rhodium in relatively small amounts and in the ratio that the various metals naturally occur. One supplier contacted by ARB estimated that they alone had sufficient reserves of noble metals to satisfy both the automotive industry and all other users for 50 years without recycling. Since non-noble metals can also function as catalysts with somewhat lower activity, it is possible that less expensive materials will be replacing noble metals in the future if catalysts remain in the principal emission control technique.

Mr. MUSKIE. First of all, I have listened to the statements of my good friends, the Senator from Colorado, the Senator from California, and the Senator from Connecticut, and I could identify no philosophical differences between their position and mine and the committee's position. Indeed, I look forward to using their arguments in the conference with the House because the House version of these two policy matters is much more conservative than that of the Senate bill. So the sponsor of this amendment, Senator Hart, and his colleagues are performing a service for the committee in providing with great articulateness the underlying philosophy which defines our joint commitment to clean air and the control of automobile emissions.

What is it that is different?

I think it might be demonstrated in part by the very automobile which was the subject of the colloquy between Senator Hart and Senator Haskell, the Volvo.

It is one car, with a four-cylinder engine. It is one production line, one model. That means, therefore, that the technology exists and it has been demonstrated in that limited fashion.

But the problem that confronted the committee was whether that technology was sufficiently advanced, the timeframe sufficiently flexible, so that that technology could be transferred to all models, all makes of cars, with sufficient safeguards that they would work, because we have to protect the consumer, when the cars are finally put in the salesrooms of the country's automobile dealers.

It is that pragmatic question which troubled the committee.

The second point I would make with respect to the Volvo is that that Volvo car was developed in response to the California standard, which is 1.5 NO<sub>x</sub>. In other words, under the pressure of the 1.5 standard, compared to the current national 3.1 NO<sub>x</sub> standard Volvo was able to develop a car that did much better than the standard required.

It is our hope and I think the belief of the committee that a 1 standard, as contained in the committee bill, would be as effective in forcing development of new technology as the 1.5 standard embraced in the California current policy.

I think those two points with respect to the Volvo illustrate the committee's thinking which prompted it to adopt the policy which is found in the committee bill.

May I in discussing the second Hart amendment address myself to two charts in the back of the room?

It is not possible to reproduce the pictorial portions of those charts, so we have prepared other charts that make the same points in the graphic form. I ask that those two charts be printed in the Record.

TABLE A2.—ADDED EMISSIONS OVER 1975 (NO<sub>x</sub>)

Scenario	Nitrogen oxides: Millions of tons per year added emissions (1975 national emissions, 24,000,000 tons)		
	1980	1985	1990
Base.....	7	18	25
No. 1.....	7	15	22
No. 2.....	7	12	18
No. 3.....	7	11	16
No. 4 <sup>1</sup> .....	5	7	9
No. 5.....	4	6	7

<sup>1</sup> Most like Senate bill.

ASSUMPTIONS (NO<sub>x</sub>)

Scenario	Light-duty vehicles (grams per mile)	Heavy-duty vehicles (percent emission reduction)	Stationary sources
Base.....	3.1	Present standards.....	Existing NSPS and SIP.
No. 1.....	2.0	EPA 1978 plans.....	Do.
No. 2.....	1.0	75 percent.....	Do.
No. 3.....	.4	90 percent.....	Do.
No. 4 <sup>1</sup> .....	1.0	75 percent.....	Accelerated NSPS.
No. 5.....	.4	90 percent.....	Do.

<sup>1</sup> Most like Senate bill.

Note: NSPS means new source performance standards. SIP means state implementation plan. Growth assumed at 3 percent p.a. for mobile and 3 to 6 percent p.a. for stationary sources.

## ATTACHMENT D

TABLE D1.—TOTAL ANNUAL AUTO EMISSIONS

[Million metric tons per year]

Scenario	Carbon monoxide (CO) (million metric tons per year)				
	1970	1972	1975	1980	1985
Freeze at present standard (15g/mi).....	55	46	32	20	17
Public health based standard in 1977 (3.4g/mi).....	55	46	32	13	4.5

TABLE D2.—TOTAL ANNUAL AUTO EMISSIONS

Scenario	Nitrogen oxides (NO <sub>x</sub> ) (million metric tons per year)				
	1970	1972	1975	1980	1985
Freeze at present standard (3.1g/mi).....	3.8	4.2	3.8	3.5	3.6
Freeze at 1977 interim standard (2g/mi).....	3.8	4.2	3.8	2.8	2.4
Similar to Senate bill (1g/mi).....	3.8	4.2	3.8	2.3	1.4
Implement present Clean Air Act (0.4g/mi).....	3.8	4.2	3.8	2.1	.9

Source: Adapted from "Air Quality and Automobile Emission Control," vol. 4, The Costs and Benefits of Automobile Emission Control, pp. 82-83. A report by the National Academy of Sciences for the Senate Public Works Committee, Committee Print, 1974.

Mr. MUSKIE. May I call the attention of the Senator from Colorado to two points with respect to this chart?

On this chart, to the right we have carbon monoxide and nitrogen oxides depicted.

The lowest curve on both charts indicates the movement of the progress of control over those two automobile related pollutants, through 1985 under the committee bill.

In connection with the oxides of nitrogen it shows the improvement that would take place under the committee bill and the Hart amendment.

On the carbon monoxide side, it is clear that the curve shows there will be steady improvement from 1975 to 1985, under the committee bill.

With respect to oxides of nitrogen, there is steady improvement under both the committee bill, which is the second curve from the bottom, and the Hart amendment, which is the bottom curve. The space between the two reflects the difference in the rate of improvement under the two amendments, if it is possible to achieve both.

This is not an assumption on the availability or the effectiveness of the technology; it is simply a depiction of what would be the relative progress under each if it is possible to get the technology and to install it on all automobiles in accordance with the time schedules of either the committee bill or the Hart amendment.

Mr. GARY HART. On the chart to the right, there is, between the committee proposal and the Hart amendment on the oxides of nitrogen standard, by 1985, about a 40 to 50 percent difference in the total amount of emissions, between 1.4 million tons per year and 0.9 million ton per year?

Mr. MUSKIE. I would like to make the point, that under the current standard the emissions are 3.6 million tons. Under the committee bill the result in 1985 is roughly one-third of that. Under the Hart amendment the result would be roughly one-fourth of that. It all depends upon what the perspective is.

We were looking at dealing with the current problem—and I will get into the other factors that entered into our consideration—and the Senator is right, that if we focus at the points he indicated, there is that difference. If we focus on where we are, both of them represent substantial progress.

May I say to the Senator, if he focuses on the 1.4 million tons of  $\text{NO}_x$  emitted in 1985 relative to the 3.6 million tons emitted in 1985 with the current 3.1 grams standard the automobile industry will say the improvement from 0.9 to 1.4 is so fractional as compared to the total problem represented by the 3.6 million tons that it should not be required. I do not share that point of view.

Figures can be used in many ways.

Nitrogen oxides are emitted by stationary sources as well as mobile sources. There has been very little focus on the stationary source  $\text{NO}_x$  problem and very little done about it. Even with respect to the non-degradation policy which occupied so much of the time of the Senate over recent days, that policy applies only to sulfur oxides and particulates and not to  $\text{NO}_x$ . Yet  $\text{NO}_x$  is a serious stationary source problem.

For example, in Denver, in the Senator's own State, in 1985, given present projections, mobile sources of  $\text{NO}_x$  will be 18 percent of the problem, and stationary will be 64 percent.

If we adopt the Hart amendment and are dealing with the stationary sources of  $\text{NO}_x$  effectively, the Hart amendment would do very little with respect to the total  $\text{NO}_x$  problem.

Mr. GARY HART. If the Senator will acknowledge as he did throughout, and as all committee members did, there is overall pollution and peak rush hour drive time pollution. The problem in Denver, which the Senator refers to, is the drive time early morning and late afternoon hours when the  $\text{NO}_x$  levels reach very dangerous proportions. That is true in many other cities. It is not the total amount of pollution and how much is contributed by mobile sources or automobiles; it is the fact that during certain periods of the day when people are in their cars and driving is when the danger occurs. That is when people are driving their automobiles.

Mr. MUSKIE. First of all, the health problem comes from the moving automobile and from  $\text{NO}_x$  partially from stationary sources.

Second, under both the committee bill and the Hart amendment substantial progress is going to be made between now and 1985 on that vehicle side  $\text{NO}_x$  problem.

The Senator makes the argument, and I have heard him make it in committee, as though the committee's standard would not deal with automobile-generated  $\text{NO}_x$ , whereas, according to this chart, the committee bill clearly will reduce it by two-thirds from the present problem.

There is a legitimate argument between the Senator and the committee on the gap at the bottom, but the Senator ought not to ignore the progress that is represented by the other gap, which is also reflected in the first chart.

The big potential improvement from the base line, which is this year, down to the two bottom lines has to come from stationary sources. The red line is the committee amendment and the bottom line is the Hart amendment. That part of the problem as compared to the other part of the problem is an entirely different order of magnitude.

With that background, may I make the case for the committee amendment?

The primary point to be made is that the committee bill is a preferable way to achieve additional control on automobiles in the foreseeable future. By setting a statutory level of 1.0 gram per mile of  $\text{NO}_x$ , the committee bill has selected a level which will force introduction of new technology but which cannot be stonewalled by the industry in the way the 4  $\text{NO}_x$  standard has been.

In its study on the good faith efforts of the automobile industry in this connection, EPA concluded that a maximum effort was not made by the automobile industry to meet the 1978 emission standards, including 0.4  $\text{NO}_x$ . As a result, the industry can now claim that technology is not available to meet that standard.

The points that the Environmental Protection Agency made are these:

First, in 1972, EPA disclosed an error in the Federal reference measure of ambient  $\text{NO}_x$  which formed the basis for the 0.4 gram  $\text{NO}_x$  standard.

Second, EPA suggested to Congress in the letter to Senator Randolph, dated November 11, 1973, that the timetable for reaching statutory  $\text{NO}_x$  be stretched, with 2.0  $\text{NO}_x$  standard in 1977, 1.0 in 1982, and 0.4 not required until 1990.

Third, Congress has been discussing the ultimate  $\text{NO}_x$  standard, for a long time and has delayed the implementation of the 0.4 gram per mile standard by 1 year, but has not yet made a conclusive determination whether the 0.4  $\text{NO}_x$  standard is required to protect human health.

Thus, the 0.4  $\text{NO}_x$  is mainly a shibboleth at this point, used by the automobile manufacturers as an arguing point to debate and delay every standard they must deal with.

The committee bill takes away that argument from them by establishing a clearly legitimate standard of 1.0 gram per mile in the near future—1979–80. Implementation of that standard will set the stage for further tightening if that should be indicated by additional information that will be available at that time.

How do we know that information will be available? The Air Quality Commission is required to study and make a report and recommendation on the auto emission standard for  $\text{NO}_x$  by March 1977. That will be sufficient time for the Congress to enact a different standard for 1982. And the committee bill establishes a research objective to build cars that can meet a 0.4-gram-per-mile  $\text{NO}_x$  standard so the necessary technical information will be generated.

I would not be surprised, given the experience with Volvo, under the 1.5 California standard, that the 1.0 national standard will force technology that will produce a better result than 1.0  $\text{NO}_x$  and conceivably 0.4  $\text{NO}_x$ , so that we will be in a learning process both in the efforts of the industry to meet this legitimate standard, under the study provisions of the act, and the mandate of a research objective to move toward the 0.4  $\text{NO}_x$  standard if evolving information and understanding demonstrates that that is essential to the public interests.

I offered the 1.0 gram/mile  $\text{NO}_x$  standard in the subcommittee and the full committee and opposed 0.4 gram/mile for these reasons:

First, The health effects basis for 0.4 gram/mile is uncertain. The NAS stated:

It appears that the Federal emission standard of .4 grams per mile for  $\text{NO}_x$  may be somewhat more stringent than is needed to achieve the ambient air quality standards for  $\text{NO}_2$  by itself. However, this finding must be carefully qualified since the existing analyses relating  $\text{NO}_x$  emissions to subsequent oxidant formation are considered inadequate.

So the state of our information is incomplete, it is inadequate, and it is the intention of the committee bill to force the development of more information and more understanding as we operate under the 1.0 standard which has a 1980 deadline.

Second, Choice of 1.0 gram per mile  $\text{NO}_x$  standard will make it easier to improve fuel economy with catalyst technology and conventional engines.

Third, The 1.0 gram per mile  $\text{NO}_x$  standard is technically achievable for the dual catalyst, three-way catalyst and alternative engines such as stratified charge, and the diesel; while with respect to the 0.4  $\text{NO}_x$  the final judgment as to diesels is not yet clear, according to the National Academy of Sciences.

To summarize, the reason we adopted 1.0 is to insure that we move in a steady line of improvement on  $\text{NO}_x$ , which all information indicates will be the case.

Second, 1.0 will reduce the present load of nitrogen oxide emissions by two-thirds by 1985.

Third, in the process, the automobile industry will be forced to develop new technology which conceivably could achieve an even better performance than 1.0  $\text{NO}_x$ , and by that time we will also know whether something better is necessary for the public health.

Finally, going to 1.0 will eliminate this argument that the automobile industry has used for years to slow down their efforts to develop technology not only with respect to  $\text{NO}_x$  but also with respect to these other pollutants as well. They have constantly argued that technological options for dealing with hydrocarbons and carbon monoxides are limited because they have to point toward a 0.4  $\text{NO}_x$  standard. That argument has been, I think, overmade but nevertheless they have used it and as a result have dragged their feet now only with respect to  $\text{NO}_x$  but also with respect to these other two pollutants which may be the more lethal really in terms of present knowledge of the three automobile pollutants.

Mr. BUCKLEY. My friend from Maine, I believe, has covered the ground, as he always does, completely and effectively. But I shall have to take exception with one statement of his: That was the one when he said that the House bill was more "conservative" than ours.

I wish to think that I am a conservative whose credentials are not questioned. It has long been my position and belief that a truly conservative position, based on an understanding of our environment, would indicate that conservatives ought to be very cautious about doing anything that interferes with systems that have served us.

I have been trying to point out that those institutions that are hesitant about radical change ought to be applied to the radical changes that modern technology has imposed upon our ecosystems, the ability of our air and water to absorb pollution.

Turning directly to this amendment, I must express my opposition to the Hart amendment.

I believe that the decision we have reached in committee on the program of auto standards is a reasonable one and I therefore intend to stick by it.

In part, it is reasonable because it provides us with assurance of permanent controls, without forcing the industry into a single control technology. This amendment to restore the permanent 0.4  $\text{NO}_x$  standard would appear to lock out forever options such as the diesel engine, the stratified charge engine, and the lean-burn system.

By setting the standard at 1.0  $\text{NO}_x$  there is every indication that we have created flexibility where it does not now exist, a flexibility that in the longer run will serve our environmental as well as our energy and economic needs.

We have heard a great deal of discussion of the need for increased automotive  $\text{NO}_x$  controls. While not seeking to minimize the needs for such controls—obviously, the increment of pollution is an important matter of concern—I must point out the need, as has the Senator from

Maine, for increased attention to the control of  $\text{NO}_x$  from stationary sources.

To clarify and illustrate this point, I ask that a chart prepared by the National Academy of Sciences showing projected  $\text{NO}_x$  levels, together with their sources, be printed in the Record.

NATIONWIDE  $\text{NO}_x$ <sup>1</sup> EMISSIONS PROJECTED TO 1990 ASSUMING THE PRESENT STATUTORY PROGRAM

Source category	$\text{NO}_x$ emission (10 <sup>6</sup> tons per year)			
	1972	1980	1985	1990
Stationary fuel combustion.....	12.27	15.96	16.82	18.46
Electric generation.....	5.94	8.16	8.20	8.88
Industrial.....	5.39	6.73	7.46	8.31
Commercial-institutional.....	.65	.76	.84	.93
Residential.....	.29	.31	.32	.34
Industrial process losses.....	2.88	3.91	4.72	5.71
Solid waste disposal.....	.18	.22	.25	.28
Transportation <sup>2</sup> .....	8.45	8.47	7.49	7.60
Road vehicles.....	7.48	7.14	5.89	5.68
Gasoline.....	6.59	5.97	4.30	3.95
Diesel.....	.89	1.17	1.59	1.73
Other.....	.97	1.33	1.60	1.92
Miscellaneous <sup>3</sup> .....	.59	.74	.87	1.02
Total.....	24.37	29.30	30.15	33.07

<sup>1</sup> Assumes a 4-percent annual VMT growth rate.

<sup>2</sup> Includes New York City point sources assumed to grow at 4 percent per year.

<sup>3</sup> 1972 total emissions are 270,000 tons lower than those summarized in table 2.2 due to the use of new road vehicles emission factors.

Mr. BUCKLEY. It is my belief that we must do far more to control stationary sources of  $\text{NO}_x$ , rather than attempt to achieve the total national improvement from mobile sources. Many types of stationary sources are now free of  $\text{NO}_x$  controls. It was with that thought in mind that I sponsored a provision in this bill that directs the EPA to study and recommend a system of penalties on the emission of  $\text{NO}_x$  from stationary sources to provide economic incentives for the development of technology for their control.

I must also point out that the committee bill retains the 0.4  $\text{NO}_x$  level as a research objective, so that we can move to it at later date if this proves wise and necessary in the interests of public health.

The Baker Commission that is established in this bill to review the entire area of air pollution control is also directed to examine this specific issue during the initial period of its existence.

Therefore, there will be ample time and opportunity for the committee to make such adjustments as this study indicates desirable, and long before we reach the 1980's.

Mr. McCURE. The point is whether or not, as has been suggested, we are moving too slowly, that we have made so little progress. We have had national standards in this field for only 8 years, and we have made tremendous progress in the 8 years.

I share with the Senator from Colorado the desire to look at that 0.4  $\text{NO}_x$ , the desire to use that as the ultimate attainment goal. But how fast can we move?

If we have not achieved everything that we hope to achieve in this short period of 8 or 10 years, in which we have been struggling with specific standards, either on a State or a national basis, and we have not achieved nirvana as yet, I remind Senators that it was 4,000 years ago

that Moses came off the mountain with the tablets of stone, and we have not yet achieved those standards, either.

Perhaps there are human frailties involved in moving as rapidly as people would like. But we have made significant and real progress in the last 8 or 10 years. Under the committee bill, we will continue to make progress.

Mr. DOMENICI. I just wish to make a couple of general comments about the committee's schedule and its arrival at a 1.0 NO<sub>x</sub> standard.

We are not here, as I see it, talking about a committee that is going to make it easy for the automobile companies. We are not here talking about a committee recommendation, either in the schedule or in the 1.0 NO<sub>x</sub>, that has succumbed to industry pressure. Quite to the contrary, we have come forth here with a set of standards that is far stricter than that which Mr. Russell Train recommends.

I am reminded that the Senator from Colorado, in urging that we move ahead as rapidly as possible because there is new technology either in place or on the horizon, quoted Mr. Train in support of his case. That was a correct quotation from Mr. Train. But when we get down to the practical application, what did he recommend?

I remind the Senate that in our schedule for 1978, 1979, and 1980 and in our 1.0 NO<sub>x</sub>, we have far exceeded what that distinguished environmentalist [said] we should be doing. Mr. Train's eloquent words about the cutting edge for cleaning up being forcing technology are reflected in the committee bill, both with reference to 1608, the first amendment, and with reference to 1.0 NO<sub>x</sub>. This bill is stricter than Mr. Train's recommendation.

I also wish to make one comment about the California data. The expert Mr. Quinn, also urges that we push ahead. But I remind the Senate that with reference to amendment 1608, the first amendment of Senator Hart, he recommends that we go slower than we are going. Yet, he is the one with the field experience with the Volvo in California.

There is no doubt in my mind that California led the way to new technology in NO<sub>x</sub>. They led it with the 1.5 standard. They measure differently whether or not you are certified. They permit you to exceed the limitation. We do not do that in our national certification. So if a 1.5 standard gets a 0.4 result under their system, a 1 with our national certification will force technology, also.

Mr. GRIFFIN. It is no secret that I am not satisfied with the reported bill as it relates to auto emission standards. The pending amendment would make the bill even worse by tightening the nitrogen oxide—NO<sub>x</sub>—emissions standard to 0.4 gram mile for cars built after 1981. That was the standard originally mandated by Congress in the Clean Air Act of 1970.

In deciding to recommend that the current statutory NO<sub>x</sub> standard should be relaxed to a level of 1.0 gram mile, the Senate Public Works Committee recognized that the added costs of meeting the 0.4 gram mile standard were not justified by public health consideration. Regrettably, the committee did not go far enough in modifying this overly restrictive standard.

For example, a study by a panel of the Committee on Motor Vehicles of the National Academy of Sciences concluded that the NO<sub>x</sub> standard seems more restrictive than need be by a factor of about three and that

a 1.5 grams per mile standard seemed more nearly what is required. Additional justification for a more reasonable  $\text{NO}_x$  standard is provided by a 1975 Yale Medical School study, which concluded that the existing statutory standard of 0.4 gram per mile was too stringent by a factor of four.

Furthermore, as the Public Works Committee report points out:

(i) t is difficult to justify stringent nitrogen oxide controls on moving sources, when more than half of the nitrogen oxides come from stationary sources and these sources remain relatively uncontrolled.

Indeed, in most major cities today stationary sources contribute more  $\text{NO}_x$  to the atmosphere than do autos. And,  $\text{NO}_x$  control of stationary sources has been shown to be far more cost effective than imposing still more stringent  $\text{NO}_x$  control on autos.

Much attention has been given to the recent announcement by the California Air Resources Board that tests of a 1977 four-cylinder Volvo resulted in emissions lower than those allowed by the existing Federal standards. A 10-percent improvement in fuel economy was also claimed. It has been argued that these test results militate against any change in the  $\text{NO}_x$  standard or any further delay in the deadlines for meeting the statutory standards.

Several important clarifications are necessary, however, to set the record straight on this matter. First, the cars would not have complied with Federal test requirements, which are more rigid than the California test standards.

Second, these results were achieved only on a four-cylinder Volvo equipped with fuel injection and a three-way catalyst. The added cost of this system is nearly \$300.

Third, the fuel economy gain was based on a comparison with a 1976 Volvo without a catalyst. Even larger gains have been made by catalyst-equipped American cars, and a number of domestic-built cars get better fuel economy than the 21.6 mpg average of this foreign car.

Fourth, the three-way catalyst is the only technology that has shown any real potential to meet a 0.4  $\text{NO}_x$  standard in the near future. As studies by EPA, the National Academy of Sciences, and the National Science Foundation have suggested, development of more promising technology would be precluded if the current  $\text{NO}_x$  standard is retained.

Fifth, the three-way catalyst installed in the test Volvo requires heavy use of the scarce metal rhodium. Indeed, rhodium producers have expressed concern about the availability of supply if this precious metal is used in the quantities required by this type of catalyst system.

Finally, Volvo itself believes that it would be unrealistic to conclude that the three-way catalyst technology can be immediately applied to all engine configuration or that in doing so, the very low emissions levels specified in the Clean Air Act could be met. In fact, the company has recommended a moratorium on emissions standards at levels that are less stringent than those contained in the pending bill.

At a time when the economic and energy effects of clean air regulations need to be given far greater weight, this amendment points exactly in the wrong direction. It would create a technological strait-jacket and lead to substantially higher fuel consumption and consumer costs.

Mr. GARY HART. I will summarize my arguments.

Congress was right in 1970 when it enacted into law a statutory 0.4 NO<sub>x</sub> standard to be applicable for 1975. Since 1970, when Congress enacted this, nothing has changed.

The arguments made before the Committee on Public Works to change this standard upward from 0.4 to 1 were two: First, the state of the economy and, second, the state of our energy situation. Both arguments are phony. No one is going to lose his or her job as a result of putting this catalyst converter on an automobile. In fact, it can create jobs.

No. 2, it is not going to destroy our energy situation.

The California standards and the California experience, which we have introduced into the Record and argued here this morning, show that you can have clean air and fuel efficiency. So nothing is changed.

All the testimony we heard in the committee about how we have to relax standards to protect our economy and protect our energy situation just do not hold water. The history of auto pollution controls in this country, in spite of the valiant efforts of people like the Senator from Maine, has been delayed. In April 1973, the EPA delayed the 1975 standards for 1 year. In July 1973, EPA postponed 1976 standards for 1 year. In June of 1974, Congress postponed standards for yet another year in response to the energy crisis. On March 5, 1975, EPA again delayed the standards for another year.

That is the record. The Senator from Maine says, and I believe I quote him accurately:

In the good-faith study that EPA conducted, the maximum effort was not being made by the automobile industry to meet the 1978 emission standards, including .4 NO<sub>x</sub>. As a result, the industry can now claim that technology is not available to meet that standard.

That is precisely the argument that I made here earlier: Because Detroit does not move on this and does not attempt to meet these standards, they can later argue that technology does not exist.

The Senator from Maine says something to the effect that 0.4 NO<sub>x</sub> is mainly a shibboleth at this point, used by the automobile manufacturers as an arguing point to debate and delay every standard they must deal with.

I think that now, to change that standard upward from 0.4, which was right when it was put in and is right today, to 1.0 as a means of getting the automobile industry off this point, to get them to meet the other standards, is the wrong approach. I think what we need now is not more delay but more pressure. That is why I offer this amendment.

Mr. MUSKIE. First of all, the concerns which moved me to present the 1.0 for the standard were not energy and the economy of the automobile industry.

Second, the 0.4 controversy has, without question, even according to the Senator from Colorado, been responsible for foot dragging and delay by the automobile industry in moving toward the solution of all of the automobile pollutant problems; 1.0 eliminates that argument. It is a legitimate target. It presses technology. It moves us forward. I think it would be a more effective way of prodding the

industry and it moves us toward progress. It enables us to move toward 0.4 sometime, if we need it.

The PRESIDING OFFICER. The question is on agreeing to the amendment of the Senator from Colorado No. 1608. The yeas and nays have been ordered.

Mr. ROBERT C. BYRD. I announce that, if present and voting, the Senator from California (Mr. Tunney) would vote "yea."

The result was yeas 30, nays 61, as follows:

[Rollcall Vote No. 478 Leg.]

YEAS—30

Abourezk	Hart, Gary	Metcalf
Bayh	Haskell	Nelson
Brooke	Hatfield	Packwood
Bumpers	Humphrey	Pastore
Case	Jackson	Pell
Church	Kennedy	Proxmire
Clark	Leahy	Ribicoff
Cranston	Magnuson	Stone
Culver	Mansfield	Weicker
Durkin	Mathias	Williams

NAYS—61

Allen	Garn	Moss
Baker	Glenn	Muskie
Bartlett	Goldwater	Nunn
Beall	Gravel	Pearson
Bellmon	Griffin	Percy
Bentsen	Hansen	Randolph
Buckley	Hathaway	Roth
Burdick	Helms	Scott, Hugh
Byrd,	Hollings	Scott,
Harry F., Jr.	Hruska	William L.
Byrd, Robert C.	Huddleston	Sparkman
Cannon	Inouye	Stafford
Chiles	Javits	Stennis
Curtis	Johnston	Stevens
Dole	Long	Stevenson
Domenici	McClellan	Symington
Eagleton	McClure	Taft
Eastland	McGee	Talmadge
Fannin	McIntyre	Thurmond
Fong	Montoya	Tower
Ford	Morgan	Young

NOT VOTING—9

Biden	Hartke	Mondale
Brock	Laxalt	Schweiker
Hart, Philip A.	McGovern	Tunney

So. Mr. Gary Hart's amendment was rejected.

Mr. GARY HART. Mr. President, the dispute before the Senate on amendment No. 1609 is between 1 gram per mile versus my amendment which provides 0.4 gram per mile nitrogen oxide pollutants; 0.4 is the current law established by Congress in 1970. All my amendment does is keep the current law what it has been for the last 6 years.

What are the practical effects and the differences between 1 gram per mile and 0.4?

First of all, the National Academy says that difference may be the difference between meeting ambient air standards in various parts of this country.

Second, as these charts show, there is a difference by the mid-1980's of about half a million tons a year of nitrogen oxides in the air.

That is important for only one reason. That is, that nitrogen oxides produce cancer. They produce cancer in the lungs of the people of this country. That is a very practical difference.

Third, there is an argument as to whether this standard can be met by automobile engines in this country and still maintain fuel efficiency.

The device I have in my hand, representatives of Detroit say does not work. That is a catalytic converter which not only achieves standards I am proposing, but does so with a 10-percent fuel efficiency increase.

If there is one thing clear to the Congress of the United States, that is improvements in the area of clean air will not occur voluntarily. The improvements we have achieved in automobile emission standards have been because of the will of the Congress reflecting the will of the people of the United States.

If we leave to the automobile industry to do it voluntarily, it will not happen.

The one question that the committee members have not answered is, why delay if the capability presently exists?

The capacity presently exists. The current law is right. Retreat from the 0.4 standard established in 1970 is a retreat by the Congress of the United States from the standard established to protect the public health and environment of the United States of America.

That is not a question merely of people's jobs. It is not a question really of energy, both of which I think are irrelevant and immaterial and unsubstantiated.

It is a question of life and death.

Nitrogen oxides cause cancer. Four thousand people will lose their lives in this country next year as a result of the quality of the air they breathe. Four million work days will be lost because of respiratory diseases.

It is undisputed that the hazards to the lungs of the children of this country, of this generation and future generations, is being jeopardized by the quality of the air coming out of our automobiles.

We can change that. We can change it by a "yea" vote on this amendment.

The technology exists. It can be achieved. The one thing lacking is the will and determination of the Congress of the United States.

Mr. CRANSTON. I would like to testify that in California the standards that the Senator from Colorado requires in his amendment are now being met.

They are being met by Volvo. But it is not only a foreign car that can meet those standards. We have been absolutely assured that Ford will market a 1978 Pinto that will meet the standard the Senator from Colorado would hold us to.

Why should we retreat, therefore? It is false that American industry cannot meet these standards.

Another point, the standards are being met in a way that provides a 10-percent gain in fuel, in miles per gallon.

So there is absolutely no reason, based upon experience in my State, not to go along with the Senator from Colorado.

Mr. MUSKIE. I like the arguments of the Senator from Colorado and I am going to use them in conference with the House to defend either the committee position or the Hart position, whichever the Senate approves, because they are applicable to both, as this chart shows.

This chart shows that with respect to auto emissions of nitrogen oxides, the total emissions at the present time are 3.6 million tons per year. The committee bill would take that down to 1.4 million tons per year in 1985, a reduction of two-thirds.

The Hart amendment would take it down to 0.9 million tons the same year.

So the difference between the two is that.

Turning attention to the second chart, the top line shows that the present level of nitrogen oxide emissions in the country are 24 million tons per year. The big part of the movement down is stationary sources of nitrogen oxide.

The committee bill will take that line down to the bottom red line by 1990, reducing the 24 million tons to 9 million tons.

The Hart amendment will take it down to the bottom line, No. 5. So the big problem is not the nitrogen oxide in automobiles, but that from stationary sources.

Why, then, did we take the committee position? Take the Volvo automobile. It was developed under a 1.5  $\text{NO}_x$  standard in California. A 1.5 was sufficiently tough to force the technology so that Volvo did better than 1.5. It did .4. The committee's 1.0 can do the same thing. Why, then, do we not go to 0.4? Because 0.4 has been a controversy ever since 1970. The automobile industry has used it to drag its feet, to delay movement on the other automobile pollutants. So we undertook to establish a legitimate target, 1.0, which will enable us to develop that Volvo technology, which is a four-cylinder engine, one car, one model; to transfer that to all cars, all models and all engine sizes by 1980 is a problem, about which the automobile industry has persuaded enough people in the last 6 years so that we made less progress than we should have on carbon monoxide, on hydrocarbons, and other automobile pollutants.

Mr. PASTORE. Does the Senator maintain that his bill is stronger than the House bill? For the conference, would we be in a better bargaining position to accept the Hart amendment and come back to where the Senator stands?

Mr. MUSKIE. My problem is not only to deal with the House but to deal with the Senate. The only way I have been able to do it in the past is to take a position which I can defend. I can defend this position. I do not suggest that Senator Hart not get votes, because that will help, as long as he does not get too many.

Mr. GARY HART. The Senator said my amendment would go into effect in 1980. It would not go into effect until 1982. It is 6 years away.

It is not that we are demanding the automobile industry to meet this standard tomorrow. It is 1982.

Mr. MUSKIE. May I add another correction? The choice is not between 0.4  $\text{NO}_x$  and 1.0. The bill sets up 0.4  $\text{NO}_x$  as a research objective and requires the National Air Quality Commission to report by 1977 on 0.4  $\text{NO}_x$ .

There is still some doubt as to the contribution that a 0.4 NO<sub>x</sub> automobile makes to the degradation of public health. We need to answer that question in order to take the argument away from the automobile companies, and we need to give a little more time to force the technology. The committee bill will do that and the Hart amendment will, too.

I think the automobile industry has demonstrated a capability of persuading people to go along with its foot dragging on this technology because they were able to persuade them that 0.4 was unreasonable; that it was based upon an error in the statistical information which produced the standard in the act, and, as a result, they have that argument; 0.4 is a legitimate research objective.

Mr. BUMPERS. This Senator is slightly confused between what the Senator from Maine has just said about the Volvo automobile and what the Senator from California said a moment ago about the Pinto and the Volvo. Does the Pinto meet California standards? Is that essentially the same standards that the Volvo four-cylinder automobile has now met?

Mr. MUSKIE. The California standard is 1.5.

Mr. GARY HART. Ford Motor Co. has announced that they intend to meet the California standards using this technology in its 1978 Pintos.

Mr. RIBICOFF. I rise in support of Senator Gary Hart's amendments. A significant deficiency of S. 3219 is the substantial relaxation of the automobile emission standards required for cars produced in 1978 and afterward. This provision of the bill seems to me to signal a retreat from the commitment to cleanse the environment. This relaxation is emission standards will have a disastrous effect on the air we breathe and on public health in general.

I am especially troubled as the State of Connecticut reportedly has the second most severe problem in the country for photochemical oxidants, which are primarily caused by motor vehicles. At times this form of pollution exceeds Federal standards established to guard the public health throughout Connecticut. Clearly, some meaningful action must be taken to resolve the situation.

One Hart amendment simply requires manufacturers to comply with auto emission standards 1 year earlier than required by S. 3219. I believe we would be committing a grave mistake by postponing the imposition of strict standards for hydrocarbons and carbon monoxide for 1 year, from 1978 to 1979, and to delay until 1980 a nitrogen oxide emission standard which is six times weaker than levels now being achieved in California under a more stringent law.

The other Hart amendment requires more stringent nitrogen oxide standards, clearly a national necessity.

Mr. KENNEDY. I rise to support the amendments of the Senator from Colorado, Mr. Gary Hart. The first of these, amendment number 1608, would require automobile manufacturers to comply with emission standards 1 year earlier than is required under the bill of the Committee on Public Works. Once the Senate has disposed of this measure, we will move immediately to a vote on the second Hart amendment which mandates an emission standard for nitrogen oxides of 0.4 gram per mile by 1982. So the question before the Senate are these: Can the standards set by S. 3219 for the year 1979 reasonably be met by

1978, can those for 1980 be met by 1979, and can a 0.4 NO<sub>x</sub> standard be met by 1982? I believe the answer to each of these questions is "Yes."

Even if we adopt both Hart amendments, the legislation we are considering will represent a weakening of the laws that are now on the books. The bill proposed by the Committee on Public Works goes very far in meeting the demands of the automotive industry. It gives the car manufacturers another year's delay in the imposition of the standards that are mandated by statutes presently in force for hydrocarbon and carbon monoxide emissions, and it raises substantially the allowable emissions of nitrogen oxides. The amendments before us would eliminate that 1 year delay, and would do no more than delay the nitrogen oxide emissions standard which the Congress imposed in the Clean Air Act of 1970.

These standards are not new. They did not just rise up suddenly out of the mist to smite the automobile companies and drive them out of business. No, these standards have been well known to the industry for 6 long years. And they would not go into effect under the amendment we are considering until 1978, and in the case of nitrogen oxide standards, 1982. So the manufacturers have certainly had adequate warning of what standards they are being asked to meet. We are not sneaking up on them. These standards were mandated 6 years ago and then only after the most careful consultation with representatives from industry and the scientific community. And I would remind my colleagues that the legislation before us constitutes a significant weakening of the original statute.

To those who argue that the pollution emission levels we are talking about are not technologically attainable, I say that we have the best proof possible that they are. They have already been met. The Volvo Co., among others, has succeeded in equaling or bettering the standards with their 1977 model, and they have achieved this without sacrificing fuel economy. In fact the cars equipped with Volvo's new catalyst system get 10 percent better mileage than those without it.

This technological accomplishment ought to prove to the satisfaction of the most doubtful that the schedule mandated by the Hart amendment can be met. But what are the dangers if we fail to pass this amendment?

The danger is that by allowing the unnecessary delay in implementation of the pollution standards mandated by the committee bill, and by rescinding forever the statutory limits on nitrogen oxide emissions, we will be sending a loud and clear message to the auto manufacturers. We would be saying to them that they stand to gain more by playing politics than by doing research. That they are better off lobbying against clean air legislation than developing a cleaner automobile. That it is far easier to manipulate the Congress of the United States than to tinker with the internal combustion engine. The automobile industry is no different from any other industry—it will take the path of least resistance and of greatest profit. There is nothing wrong with this—it is the basis of the free enterprise system. But it is incumbent on us in the Congress to insure that the path of least resistance is also the path of greatest value to the society. That is why we must have tough but reasonable regulation.

Mr. MUSKIE. May I say the Pinto meets the present California standards but not the statutory standard, which is 0.4 NO<sub>x</sub>.

The PRESIDING OFFICER. The question is on agreeing to the amendment of the Senator from California, amendment No. 1609.

Mr. ROBERT C. BYRD. I announce that, if present and voting, the Senator from California (Mr. Tunney) would vote "yea."

The result was yeas 33, nays 58, as follows:

[Rollcall Vote No. 479 Leg.]

YEAS—33

Abourezk	Haskell	Metcalf
Bayh	Hatfield	Moss
Brooke	Huddleston	Nelson
Bumpers	Humphrey	Packwood
Byrd, Robert C.	Jackson	Pastore
Case	Javits	Pell
Clark	Kennedy	Proxmire
Cranston	Leahy	Ribicoff
Culver	Magnuson	Stone
Durkin	Mansfield	Weicker
Hart, Gary	Mathias	Williams

NAYS—58

Allen	Ford	Morgan
Baker	Garn	Muskie
Barlett	Glenn	Nunn
Beall	Goldwater	Pearson
Bellmon	Gravel	Percy
Bentsen	Griffin	Randolph
Buckley	Hansen	Roth
Burdick	Hathaway	Scott, Hugh
Byrd,	Helms	Scott,
Harry F., Jr.	Hollings	William L.
Cannon	Hruska	Sparkman
Chiles	Inouye	Stafford
Church	Johnston	Stennis
Curtis	Laxalt	Stevens
Dole	Long	Stevenson
Domenici	McClellan	Taft
Eagleton	McClure	Talmadge
Eastland	McGee	Thurmond
Fannin	McIntyre	Tower
Fong	Montoya	Young

NOT VOTING—9

Biden	Hartke	Schweiker
Brock	McGovern	Symington
Hart, Philip A.	Mondale	Tunney

So Mr. Gary Hart's amendment (No. 1609) was rejected.

AMENDMENT NO. 1577

The Senator from Oregon (Mr. Packwood), for himself and others, proposes an amendment numbered 1577.

"SEC. 153. (a) On and after January 1, 1978, except as provided in subsection (b), it shall be unlawful for any person to manufacture, produce, import, or export from the United States, aerosol containers containing halocarbons.

"(b) The Administrator shall consider the available reports, consult with appropriate Federal agencies and scientific entities, and afford the opportunity for public hearing, and if he then—

"(1) finds that no significant risk to the public health, safety, or welfare is, or may be posed by the discharge of halocarbons into the ambient air from aerosol containers, then he may, by rule, modify or rescind the prohibition in section 153 (a) in whole or in part consistent with that finding, or

"(2) determines that a particular use of halocarbons in aerosol containers is essential for the public health or welfare and an adequate substitute for halocarbons is not available, he may grant specific exemptions from the prohibitions of this section to allow the use of small quantities in such situations.

"(c) From time to time the Administrator may revise any of the regulations issued pursuant to this section in the light of new evidence as to the need for such regulations.

"(d) Nothing in this section shall limit, restrict, or otherwise detract from the authority provided in section 154 of this Act, or any authority under the Consumer Product Safety Act. [See Secs. 150-159]

Mr. PACKWOOD. This amendment is clear and very simple. What it does is ban the use of a group of chemicals generally called fluorocarbons after January 1, 1978, unless the administrator finds that the use of fluorocarbons causes no significant risk to health and public welfare. Exception is made for some unique necessary uses, such as medication in the treatment, for example, of asthma, and those uses will not be affected by this particular ban.

The argument about fluorocarbons in the atmosphere started about 21½ years ago, when it was discovered that the gases, that is, the spray emitted with hair sprays, deodorants, and antiperspirants drifts upward into the atmosphere and begins to destroy what is known as the ozone level in the atmosphere.

Ozone is a chemical that filters out the Sun's ultraviolet rays. A very slight change in the thickness of the ozone level will let through substantially more ultraviolet rays, and it can have and will have an adverse effect on the Earth, an adverse effect on the climate, an adverse effect on agriculture, and without a doubt, an adverse effect on the incidence of skin cancer.

There is very little argument as to whether or not fluorocarbons are dangerous. Even the committee bill comes to that conclusion. There is at the moment a split in the scientific evidence, but the split really falls into these two camps: One, that it is absolutely dangerous, it is dangerous now, and as it takes 10 years from the time any of this fluorocarbon is emitted on Earth until it drifts up to where it affects the ozone level, we do not know what damage we have done during the last 10 years, but we cannot stop it, and therefore we should have a ban immediately; while other scientific evidence says, well, there is no doubt it is harmful, but we are not quite sure how harmful it may be, and we can afford to wait a year or two until we do some further testing.

There is, no evidence that the fluorocarbons are not harmful. We can forget that. The question is, do we ban them now, or wait a few years until the danger is imminent, and then do it?

If there was a reason for fear that by banning fluorocarbons we would adversely affect our national defense posture, or do some other significantly adverse thing to this country, then we could balance it. We could say, do we want to ban the fluorocarbons or keep them because of some other countervailing necessity?

In this case, there is no countervailing necessity. First, fluorocarbons are not necessary for all of these hair sprays, antiperspirants, and deodorants we use. All of us have seen advertisements recently for different products—I have a number on my desk—where they are going back to

the simple old Windex pump; you press down and out comes the spray. They do not need any fluorocarbon at all.

Second, 75 percent of the fluorocarbons used are used in three categories: hair sprays, antiperspirants, and deodorants. Those are hardly the critical stuff by which civilization is kept together. If we have to go back to the inconvenience of pressing a button and forcing a spray with the physical pressure of our finger, I do not think, somehow, that civilization is going to decline. If we are not willing to trade off the known risk of fluorocarbons so that we can have the convenience of a fluorocarbon propelled spray deodorant or hair set, then I seriously question the values of this society.

Is it going to cause a dislocation to business? No, it is not. One of the biggest manufacturers in this country of products of this nature, the Johnson Wax Co., a year ago ceased using fluorocarbons in any of its products. Let me give you a list of some of the products they manufacture. They are well known to all of us:

Pledge furniture polishes, Raid insecticides, Johnson Wax automotive products, Jubilee kitchen wax, Favor furniture polish, Glade air fresheners, Edge protective shave, Crew bathroom cleaner, Off insect repellants, Big Wally foam cleaner, Klean 'N Shine multi-surface cleaner, Glory rug cleaner, and Shout pre-spotter.

All from one company, which has totally quit using fluorocarbons, and announced in a public advertisements a year ago that the risk is such that they could not in good conscience keep using it.

Now, if Johnson Wax can cease using fluorocarbons and can find a variety of devices like this to use, there is no reason why other companies cannot do the same. The real objection to the amendment comes, not really from companies like Johnson Wax or others that make the products; it comes from two or three chemical companies that make the fluorocarbon propellant, who do not want to miss their piece of the pie.

If the sake of two or three chemical companies we are going to endanger our climate and endanger our health, when there is an adequate substitute for the propellant that is manufactured, and when 75 percent of the propellants manufactured is used for three items, hair spray, deodorants, and antiperspirants, if we are not willing to make that small sacrifice, then I think we have our values badly askew in this country.

Mr. McINTYRE. For all of us, the problem in understanding the ozone depletion theory has been the same: We have been forced to rely on the experts because of the complex nature of the scientific evidence.

Consequently, many thousands of pages of testimony were compiled by a special Senate subcommittee under leadership of Senator Bumpers and Senator Domenici. Additional hours of testimony were taken by House Subcommittees. A Federal task force has issued its report and there are many other scientific papers readily available.

I make no claim of special scientific expertise in understanding the mysteries of ozone depletion, and my first reaction to this whole thing was one of healthy skepticism.

Who among us wants to believe that a bug spray or underarm aerosol used in 1960 is today a contributing cause of chlorine in the stratosphere which threatens to increase ultraviolet radiation on Earth, resulting in thousands of new cases of skin cancer?

Let me make a few observations to provide some perspective.

First, the scientific warnings are fact, not fiction. Prestigious scientists have nothing to gain from exposing themselves to possible ridicule.

It took real courage on the part of the scientists who expressed concern, including Dr. F. Sherwood Rowland of the University of California and Dr. Ralph Cicerone of the University of Michigan.

As bearers of stranger-than-fiction scientific warnings, they have been subjected to ridicule and scorn, but they stand firm in their claim that aerosols containing fluorocarbons should be banned.

Since aerosols account for an estimated 62 percent of the fluorocarbons released into the atmosphere, a ban on the use of the chemical as a propellant in sprays would significantly reduce the fluorocarbon impact on the ozone layer.

Second, the warnings about the effect of fluorocarbons on the Earth's protective ozone shield have been scrutinized very carefully by industry, by other university researchers, even by a Federal task force comprised of 14 Government agencies.

That task force issued a long and detailed analysis of the ozone depletion problem in June of 1975. Known publicly as the IMOS report, it made a number of recommendations and concluded that the so-called theory of ozone depletion is "legitimate cause for concern."

That task force report was a real shocker for industry users and producers of fluorocarbons.

It said that unless new scientific evidence is found to remove the cause for concern, fluorocarbons should be restricted after January 1, 1978, to replacement fluids in existing refrigeration and air conditioning equipment and to closed recycled systems or other uses not involving release to the atmosphere.

In short the IMOS report recommended a ban on use of fluorocarbon propellants in aerosol sprays beginning January 1, 1978, unless new scientific evidence is found to refute the scientific warnings about continued use of fluorocarbons.

That is the purpose of the Packwood amendment. For those who continue to claim that the Packwood amendment moves too fast let me ask them to consider this timeframe:

The warning about fluorocarbon destruction of ozone is now at least 26 months old. The first congressional hearing was held in December of 1974. The IMOS report has been gathering dust for more than a year. And the Packwood amendment asks no action for still another 1½ years to give ample time for completion of a series of studies aimed at eliminating any doubt about the validity of fluorocarbon-caused ozone destruction.

The ozone protection section provides a reasonable timetable to study and restudy the scientific data about fluorocarbons and to determine if no significant risk exists. This timetable fits perfectly the purposes of the Packwood amendment. It provides that the Administrator of the Environmental Protection Agency would waive restrictions on use of fluorocarbons if no significant risk exists. On the other hand, a decision that restrictions are necessary would constitute a finding—after exhaustive study—that a significant risk does exist.

Such a finding would constitute a need for a ban on fluorocarbons in aerosols and those restrictions, under our amendment, would go

into effect on January 1, 1978, although they would be subject to modification by the EPA Administrator to accommodate any new evidence or provide for essential uses to benefit public health or welfare.

Despite our agreement on the need for additional studies, the Senator from New Mexico differs with this Senator, Senator Bumpers, and Senator Packwood on a deadline for action. I greatly respect Senator Domenici's judgment and contention that there would be no significant ozone reduction during the 3-month difference between the effective date in the Packwood amendment and the effective date, if it is met, in the committee's bill.

I would not want to quibble over 3 months when it has taken nearly 20 years to dump 15 or 20 billion pounds of fluorocarbons into the atmosphere. But I am concerned that we could be legislating possible additional delay.

For example, under the provision supported by Senator Domenici, the EPA Administrator, not later than April 1, 1978, is supposed to promulgate and transmit to Congress final regulations dealing with possible restrictions or a ban on fluorocarbons in aerosols.

But before issuing those final regulations, he is also required to hold public hearings, and those hearings could take many months, delaying submission of the final regulations despite the deadline. In addition, there is a 90-day period after submission of the final regulations, during which either the House or Senate could disapprove of the regulations.

So it seems to me we are talking about a provision in the committee bill which would delay restrictions on fluorocarbons—even if they are needed—until at least the middle of 1978 and perhaps for many more additional months.

Now I know the committee worked hard to also provide authority under the expedited regulation section to anticipate a possible need for speedier action.

In fact, Section 154 states that the Administrator at any time prior to January 1, 1978 shall promptly promulgate restrictions or a ban on the sale or manufacture of aerosols discharging fluorocarbons if necessary to protect the public health from significant risk.

The point I want to make is that the expedited regulation section also provides for public hearings. I do not quarrel with that provision because the section is intended to speed up the normal regulatory process. However, the legislative history should also be clear that the hearing process is not intended to produce delay, and should be completed within 60 days.

Mr. DOMENICI. As the principal author of this section of the Clean Air Act, I concur that the expedited section is to take care of the very problem that we are discussing. In the event that the Administrator finds that there is serious harm, then he can act within a very short period of time. He does not even have to wait until 1978. Those 60 days are intended to be the absolute maximum, if he chooses to use the expedited sections.

Mr. MCINTYRE. Finally, the expedited regulation section provides the EPA administrator with authority to act promptly only until January 1, 1978. This is all the more reason to adopt the Packwood amendment, which restores to the committee bill a January 1, 1978.

deadline for action which is consistent with the provisions for studies of the scientific evidence.

It is a rational and reasoned approach to a difficult and complex scientific dilemma.

It is responsive to the people's need for timely action by Congress.

It is a clear signal to State legislatures and local municipalities considering a ban on aerosols that action is forthcoming.

And most important, passage of the Packwood amendment would be a unique opportunity to prove to future generations that we do care about what is happening to our world.

Mr. BUMPERS. Last September 1, Senator Domenici, my colleague from New Mexico, and I, as an ad hoc committee of the Committee on Aeronautical and Space, began hearings on what we called, in a nice bureaucratic phrase, "inadvertent modification of the stratosphere."

We had 9 long days of hearings during which time we heard from many renowned and reputable atmospheric scientists in the United States. We heard from industry. We heard from everybody we thought could shed any light on this. We heard from the people who composed the IMOS report, the CIAP report, and so on.

Now, here it is. Here are the hearings, 1,500 pages. This is available for any Member of this body who cares to look at it or have a staff member look at it.

I defy any reasonable man in this body or in this country to read very carefully the 1,500 pages that were developed at that hearing and vote against this amendment.

The principle of this amendment is analogous to that of the Gary Hart amendment which we just voted on concerning the delay of auto emission standards.

This amendment is not saying that you cannot use fluorocarbons in your air conditioners and refrigerators. Two billion pounds of fluorocarbons are manufactured in the world each year, of which the United States manufactures half or 1 billion pounds. This amendment says that of the billion pounds we manufacture, the half that goes into aerosols that are absolutely nonessential will be banned on January 1, 1978. I am talking about the underarm deodorants and the hair sprays.

It might be argued that there might not be suitable substitutes. But we had one or two people testify that the consumer would get a break out of this legislation because the roll-on deodorants and the pump hair sprays are much, much cheaper than the aerosols, and they are just as effective.

The industry told us there are 12,000 people and \$2 billion involved in this amendment. But you consider 12,000 jobs against the testimony of one of the most renowned dermatologists in the United States, Dr. Fitzpatrick, head of the Department of Dermatology at Harvard. In testimony before our subcommittee he said:

Malignant melanoma skin cancer is not known definitely to be related to sunlight exposure, but more and more evidence points to a direct relation between melanoma and sunlight exposure:

The incidence and death rate of malignant melanoma are rapidly rising in all countries at a rate of about 3 to 9 percent per year, so that the death rates have doubled in the last 15 years.

At the time of our hearings it was believed that a 1-percent decrease in ozone produced a 2-percent increase in nonmelanoma skin cancer. Since then, a report prepared for the National Cancer Institute shows

that such a decrease in ozone will produce a 5-percent increase in skin cancer.

If you take the Rowland-Molina theory, which says that in the upper regions there is a 13-percent depletion of the ozone, and if you reduce that to 4 percent, you are talking about a 40-percent increase in nonmalignant skin cancer. Why do we stand here debating such a thing?

Then, for those of you who raise soybeans and cotton in your own States, or if you are worried about the ultimate supply of food in this country, Mr. Krizek, of the Department of Agriculture, said this in his testimony:

Certain plants, such as peanut, wheat, milo and fescue, were found to be resistant to increased UV-B radiation, while others, such as pea, tomato, cotton, radish, and coleus, were found to be sensitive to increased UV-B exposure.

These studies indicated that the extent of UV-B damage depended greatly on the size and anatomical composition of the plant, the amount of available visible light, and other environmental factors.

In general, seedlings were much more sensitive to UV exposure than mature plants and reproductive organs were more sensitive than vegetative parts of the plant.

Dr. Caldwell, a plant biologist with the University of Colorado, said, in response to this question:

*Question.* As has been pointed out, stratospheric ozone may be depleted by a variety of man-made agents and there may be an increase in UV-B.

The Congress must legislate in the interests of human health and welfare. Biological effects of increased UV radiation appear to be such that we must regulate, or even ban, some things that might cause a decrease in the ozone layer.

In your educated opinion is there some level of UV-B increase that may be acceptable?

If so, how would you approach the determination of such an acceptable level?

Answer. At the present time it is very difficult to provide even a reasonable guess as to a tolerable level of ultraviolet radiation increase. As I outlined in my testimony there is some reasonable experimental basis to be concerned about even small increases of a few percent. Nevertheless, this need not forecast dire consequences should an increase of a few percent take place. I am afraid that our ability to assess a tolerable level at the present time is beyond our capability.

Opponents of this amendment say that the theory of ozone depletion is not proven. Dr. Friend of the National Academy of Sciences Committee dealing with this issue had this to say.

Senator BUMPERS. What you are saying is that you can determine whether the theory is correct or not, but you can't assess the amount of damage that is being done without those measurements, can you?

Dr. FRIEND. Well, we will provide estimates based on calculations of the amount of ozone change or the effects of these materials present in the stratosphere. We will provide estimates of that without having direct measurements.

In addition, there are the comments of Dr. McElroy, of Harvard University, who was voted one of the 10 outstanding people in the United States last year, and who is one of the leading atmospheric scientists in the world. He testified at our hearings. Here is what he said:

I think, first of all, it is very difficult for those of us who are, you know, very closely and personally, intimately involved in research to be—it is very difficult to be totally objective. One has a certain involvement, emotional involvement in the work which makes it very difficult to really take a broader view.

I think in some sense you are better capable of judging what should be done than I am. I think also I am aware that the National Academy of Sciences has a panel of distinguished scientists working on this problem. They don't have this

emotional bias that I may have, and I would rather that they should make recommendations than I.

So, I would rather decline to make any recommendations. I think it is—my advice to you on that issue isn't worth any more than the advice of any informed layman on the subject, I think. It is my role, as I see it, to try to define the scientific issue. I think that there is little doubt in my mind scientifically that the fluorocarbons will make their way to the stratosphere, that they will release chlorine atoms and chlorine will react with the ozone and there will be a drop in the level of the atmospheric ozone, and that will cause environmental effects, but somebody else should make the total assessment of what should be done. I don't think it is my position to do so.

Here is a very objective scientist saying, "I can tell you this is going to happen." You have other scientists saying, "If it does, here are the disastrous consequences." He is saying to the Congress, "It is up to you. You are reasonable men."

You have got a time bomb ticking off up there, and you are not going to know for certain until after 10 to 12 years whether you made a mistake or not. I say we cannot afford to wait. Let us err on the side of caution and adopt this amendment.

Mr. NELSON. I endorse the amendment offered by the Senator from Oregon. I have an amendment which seeks to accomplish a similar purpose with somewhat different standards.

I think the basic question is simply this: When you look at the issue of introducing something into the environment, some synthetic into the environment, you must raise the cost-benefit ratio question or the risk-to-benefit ratio question.

The benefit of the use of 80 or more percent of fluorocarbons amounts to practically nothing.

On the other hand, distinguished scientists worldwide are raising alarms about the potential risk.

The benefits are slight personal convenience. The risk is a potential worldwide disaster of immeasurable proportions.

It is absolutely preposterous on that risk-to-benefit ratio to permit the aerosols to be on the marketplace another 24 hours.

There is no benefit that is worth that risk, including the possibility of not only health hazard, but worldwide modification of the weather with a worldwide disaster.

Some 55 studies have been, or are being conducted, which indicate that specific fluorocarbons deplete the ozone layer in the upper stratosphere, thereby reducing the protection to the Earth from dangerous ultraviolet radiation.

The National Academy of Sciences Committee on the Impact of Stratospheric Change, which has been studying the subject for several years, has prepared a report, recommending that nonessential uses of fluorocarbons in aerosol spray cans be eliminated, according to a panel member as reported in the Philadelphia Inquirer, March 19, 1976, and Business Week, April 5, 1976. The NAS study, due this month, involves participation by four agencies: SNF, EPA, NOAA, and NASA.

Here are the facts, as scientists have concluded:

Erosion of the ozone layer can cause increases in the incidence of skin cancer and mutation of plant life.

A petition filed by 10 States, the Natural Resources Defense Council, Inc., and Environmental Defense Fund, Inc., seeks to have the Consumer Product Safety Commission declare that pressurized consumer products containing certain fluorocarbon propellants be banned as

hazardous. The States participating in the petition are: Minnesota, New York, Michigan, Oregon, Wisconsin, New Hampshire, Colorado, Florida, Vermont, and Massachusetts.

The petition cites the following dangers:

A report of the Federal Task Force on Inadvertent Modification of the Stratosphere: Fluorocarbons and the environment, June 1975—IMOS report—says that current estimates indicate that even without further growth in fluorocarbon use above the 1972 level the eventual, equilibrium reduction of ozone would be about 7 percent. If the use of fluorocarbons continues to grow at the rate at which it grew during the 1960's, a reduction of between 10 and 15 percent will occur early in the next century.

A 7-percent reduction in the ozone content of the stratosphere will cause an additional 42,000 to 140,000 cases of skin cancer each year in the United States, and an additional 126,000 to 420,000 cases worldwide. A 15-percent reduction will cause an additional 90,000 to 300,000 cases of skin cancer each year in the United States and an additional 270,000 to 900,000 cases worldwide, the petition contends, based on the IMOS study.

Even if no additional fluorocarbons are released, further reduction in the average concentrations of ozone would continue, reaching a maximum in about a decade. The naturally occurring ozone formation necessary to counter this decrease would take at least a century or more, the IMOS report concludes.

New laboratory and atmospheric measurements of the key chemical reactions and their rates have led to refinements and downward revisions of the expected amounts of ozone reduction, the petition notes. However, the petition points out that other new measurements have led to upward revisions of the estimates. "The net result of the new information, taken as a whole, is that the overall estimates of ozone reduction are approximately the same as those of more than a year ago," the petition states—page 27. "At the same time, the new estimates are fortified by stronger experimental data than were available for the earlier estimates," it concludes—pages 27-29.

Climate changes may result from fluorocarbon influence on the Earth's temperature.

According to information in the petition—pages 36-37—studies by Dr. V. Ramanathan of the Langley Research Center of the National Aeronautical and Space Administration—NASA—indicate that in the cool temperatures in the lower atmosphere, fluorocarbon molecules absorb heat radiation from the Earth's surface and trap a substantial portion of it. This results in a "greenhouse effect" that may warm the Earth enough to cause significant climatic changes with respect to rainfall, ice-cover, and a partial melting of the polar ice caps.

Approximately 50 percent of all world use of pressurized products containing these ozone-depleting fluorocarbons and similar compounds as propellants is by U.S. consumers.

A recent Arthur D. Little study, contracted by the Environmental Protection Agency—EPA—says that aerosols account for about 62 percent of the fluorocarbons released into the atmosphere, with refrigerants—enclosed uses—leaking about 25 percent. The remaining 13 percent of fluorocarbons are used in both enclosed and nonenclosed ways, such as in solvents and as foam-blowing agents to make plastic products.

Alternatives to aerosols and alternative propellants that are not known to harm the ozone layer exist, and new ones are being developed by the aerosol industry. In fact, many manufacturers of consumer products that have been using aerosol sprays now are advertising and promoting nonaerosol containers. S. C. Johnson & Son of Racine, Wis., manufacturers of wax products, have ended the use of fluorocarbon propellants in production of its broad line of consumer products.

The EPA has recommended that pesticides be packed in nonaerosol containers.

FDA Commissioner Alexander M. Schmidt, M.D., in an interview with U.S. News & World Report, Inc., February 23, 1976—pages 52-55—cited "fluorocarbons as a spray propellant" as an example of products that need to be removed from the market because of "a very strong suspicion rather than absolute proof" of risk to humans. He states:

We already have banned use of vinyl chloride in aerosols because of the cancer risk. Now there is a theory that fluorocarbons may destroy the ozone layer in our atmosphere that filters out ultraviolet light. The fear is that the result may be an increase in skin cancer.

There are quite a bit of data that show this thesis is correct. I don't think we can afford to wait a decade or two decades for incontrovertible proof that the ozone is disappearing. The National Academy of Sciences is studying the available evidence now. We will have their report within the next year, and will then make a decision.

Finally, retail prices of nonaerosols are less costly to consumers. An article by Sidney Margolius in the Washington Star, February 14, 1976, notes the comparative lesser costs of nonaerosol consumer products.

Mr. DOMENICI. At the hearing, which was not an accident, but the result of an effort of the junior Senator from Arkansas, for the first time in the Senate actually brought experts to talk about the ozone layer which shields us from excessive rays of the sun.

For the first time, a comprehensive evaluation of what this Nation, was doing to try to evaluate not only the impact of fluorocarbon ions from aerosols, but other impacts on the ozone from all of man's activities [was presented].

I regret to say I do not agree with the Senator.

My differences are one of degree for I share his concerns and the concerns of Senator Packwood about the impact of what we are doing here on Earth by sending upwards into that ozone substances that will impact on it. I just fail to agree in what we ought to do about it.

We are not here saying that we are not going to do anything about the impact of aerosols on the ozone layer. Quite to the contrary, the Senate should understand that for the first time in this bill, because of action of the Public Works Committee, jurisdiction is now vested in one agency, one administrator, to begin the process of evaluating our knowledge, gathering scientific information, and beginning to gather up facts on the impact of aerosol sprays and other substances on the layer.

As a matter of fact, EPA has the regulatory authority, under the committee bill as alluded to by my good friend Senator McIntyre, at any time from now until January 1 of 1978, if Mr. Train in his capacity, or his successor, find there is a serious health hazard. They can conduct expeditious 60-day hearings and ban aerosols in whole or in part.

So the committee has put in place a strong regulatory process. Its final element is January 1, 1978, at which time that agency must decide whether or not they are going to ban in whole or in part but, regardless, they must come up with a regulatory scheme based upon the information they gather.

There are many scientists in this country talking about what is happening to our ozone.

My friend from Arkansas would probably say that there is no more distinguished scientist on this issue than the very distinguished professor from Harvard, Dr. McElroy.

Let me state some things he has to say as I remember them.

We are talking about a theory that one of the fluorine ions that come off aerosol because it has certain characteristics will do some displacing in the ozone layer and diminish  $O_3$ , one of the ozone components, heavy oxygen.

Dr. McElroy says that probably we ought to stop producing nitrogen fertilizer in the world.

He has on paper a theory that is exactly akin to the theory before us that says, as we produce nitrogen fertilizer to feed mankind, we are sending up an equally destructive ion. He even concludes that, theoretically, it is probably worse than the ion that comes off the aerosol spray.

Let me state what Dr. McElroy says about whether or not we should regulate a ban on ozone at this point.

I will quote from his statement.

The system is still in a state of great flux. It is too early to make legislative changes that would restrict the substances.

At the moment, half-baked ideas are being produced at a ferocious rate. That's all right when you're only talking to your friends. But it's most regrettable that scientists are telling politicians that they must regulate, as if the evidence was hard.

That is a quote from that eminent scientist on June 24, 1976.

Mr. BUMPERS. Where was the statement made?

Mr. DOMENICI. It is the magazine the New Scientist, June 24, 1976, at page 685.

In this bill the committee, evidencing a genuine concern for an appropriate regulatory system in this area, has set into motion for the first time, No. 1, a vesting of regulatory jurisdiction with EPA; and No. 2, mandating that they accumulate the information that is being gathered by a number of studies, which are identified, which are ongoing. NASA has some. Various agencies of the Federal Government have them. EPA must gather them up and evaluate them in an ongoing manner.

By January 1, 1978, whether or not it is all together, they must begin hearings and decide within 90 days whether or not aerosol is to be banned.

Those are not the actions of a committee which is taking this matter casually. That is not the action of a committee which disagrees with the facts stated here.

It is just that this committee has concluded that we need to let the National Academy of Sciences complete its report. It has not brought forth its report following the IMOS study. That is not ready yet, and NASA is not finished with their study. We say we ought to let those take their course. If they prove what is being said by the proponents, EPA will certainly ban this product.

The reverse is expected by this Senate under the Packwood amendment. They would like us to ban, as of January 1, 1978, and then say, "However, if this theory can be disproved, then the ban would not be effective."

If that negative burden of proof is an appropriate regulatory process, then I submit that we ought to ban it today. We ought not wait until January 1, 1978. We ought not appoint a regulator to gather the evidence. We ought not continue with these studies that we have. No one will ever disprove the negative of this situation.

I would also suggest that if we have the conclusive evidence that is talked about here, we ought to ban also the fluorocarbons that appear in our refrigeration systems for they are a major contributor. It is just that they have some very serious economic impacts. But if we are ready and we know it all, and it is as serious as everyone says, we ought to amend the Packwood amendment and ban it today. We ought to ban refrigeration also because that represents a substantial portion of aerosol being emitted into the ozone layer.

Mr. PACKWOOD. The Senator made reference to the negative burden of proof. Do we use that in other administrative procedures whereby we prohibit the use of things?

Mr. DOMENICI. We have done it. We did it on cyclamates, and it took a long, long time. The negative was finally proven, that we were wrong in banning originally.

Mr. PACKWOOD. As a matter of fact, we use it in quite a few Federal acts, do we not?

Mr. DOMENICI. To my knowledge, I cannot say that we do or do not. I can only say, and I say this in all honesty that the very nature of the scientific problem will make it impossible to prove the negative. On the other hand, with the kind of research we are doing, we can prove the positive.

Mr. PACKWOOD. Just within this year under the Toxic Substance Act on polyvinyl chlorine the Senate adopted a negative burden of proof unanimously on the floor. Is that something new for the Senate to do?

Mr. DOMENICI. I acknowledge that. That is not the law of the land yet, nonetheless. But those substances are subject to very precise scientific measurement.

Mr. PACKWOOD. What about in the Marine Mammal Act where we prohibit the taking of marine mammals unless the applicant who wants to take them can prove he can meet the purpose of the act? We do not know how many accurate counts there are, but we are putting the burden of proof on the applicant. He cannot do anything unless he can prove the negative.

Mr. DOMENICI. I do not see any comparison between that particular example and the negative burden of proof in this particular instance for two reasons: We are never going to be able to prove the negative so we might as well have a ban. Second, we are involved in some extremely comprehensive—and I say belatedly but finally—studies. Some very significant scientific investments are now in research projects in NASA, EPA, and others. They will come up with some modeling techniques that are going to show us by January 1, 1978, or earlier, whether or not the theory of the good professor from California, upon which this entire episode is based, is for real or not.

Mr. BUCKLEY. I would like to address myself to the Packwood amendment imposing a negative burden of proof on those who manufacture and utilize fluorocarbons.

For more than a year, I have tried to keep abreast of the growing debate and literature over the impact of fluorocarbons on the ozone layer. On the basis of the studies I have seen, it is impossible, I believe, to make any final judgments as to the long-term impact of fluorocarbons released from aerosols and refrigeration systems on the ozone shield. I feel, however, that four basic important conclusions can be made at this time:

First. Because of its importance to the environment and human life, we cannot allow any activities that would result in a significant depletion of the ozone layer.

Second. Current scientific knowledge about the stratosphere and the mechanics of ozone depletion is insufficient for judging the validity of the fluorocarbon-ozone depletion theory.

Third. Because there is time to accumulate the necessary information without danger to human health or the environment, precipitous action having a large-scale, adverse impact on employment and convenience is not called for at this moment.

Fourth. The required information is now being accumulated and will be available, within the time frame set out in the committee bill, for the formulation of such regulatory action as may be required for the timely protection of the public health and welfare.

There has been little disagreement that if any necessary regulations are in effect by 1978, we can prevent irreparable harm to the environment. I am satisfied that this is so, and I consider any attempt to supplant the committee approach with that of the Packwood amendment as precipitous and imprudent.

The bill now before us would allow us to take full advantage of the intervening years without requiring us to make a judgment on the basis of as yet unproven theory. It would direct the Environmental Protection Agency to coordinate and contribute to two series of reports from NAS, NASA, NOAA, NSF, and the Departments of Agriculture, HEW, and Labor.

The first series, due this October, would be an accumulation of the knowledge we presently have on the long- and short-range effects upon health, climate, and so forth, of manmade impacts on the stratosphere. The second, due October 1, 1977, would report the results of investigations now being conducted by all of these agencies that relate to the problem of stratospheric pollution, its causes and costs, and the costs of corrective measures.

The expedited regulation section of the bill would allow the Administrator of EPA to propose regulations at any time restricting or prohibiting the manufacture, sale, import, export, or use of aerosols containing halocarbons, if he found significant danger to human health or welfare, even if proof of such harm was not completely conclusive. This, it seems to me, is adequate protection against the possibility that we have underestimated the imminence of a crisis. Otherwise, he would propose any necessary regulations on aerosols by January 1, 1978, and any necessary regulations on sources of fluorocarbons other than aerosols by April 1, 1978. The regulations would become effective unless a majority of either House opposed them within 90 days.

I am satisfied that this reasoned approach poses no risk to the public health or welfare. By 1978, we should have sufficient information in hand to verify the degree to which the theory of ozone depletion is accurate, and to allow us to make a responsible, informed judgment on the matter.

I am equally satisfied that the alternative of a statutory ban against the future manufacture and distribution of products containing fluorocarbons as of a date certain, sets a dangerous precedent. To accept at this time the imposition of a negative burden of proof to affect a total ban is to give a currently viable American industry only one opportunity for survival, that being to prove the negative of an unproven hypothesis. We need to be more sure of our ground before imposing such an impossible burden in averting what would appear to be something other than an immediate risk. In so doing, we abdicate our own responsibility to make an important judgment based on a more substantial understanding of the facts than is now available to us.

We are weighing grave considerations. We know that if the theory were completely true, and that is a matter of great scientific controversy, it could mean an increase in melanoma and non-melanoma skin cancer in humans from 2,100 to 15,000 for each 1 percent reduction in the ozone shield, with still further carcinogenic effects upon livestock. A significant depletion of the shield could result in fundamental changes in the growth characteristics of certain plant and animal species, disturbances in aquatic and terrestrial ecosystems, and a lessening of the stability and effectiveness of agricultural chemicals with a resultant reduction in the yield of agricultural crops.

The consequences of the elimination or curtailment of the fluorocarbon industry are also extremely serious. Despite the fact that we are dealing with a global problem where our six primary U.S. manufacturers account for slightly less than 50 percent of the world's fluorocarbon production, let us examine the consequences in the United States alone.

The production value of the six primary U.S. manufacturers of fluorocarbons is in excess of \$500 million. In 1974, the jobs of more than half a million persons were directly dependent upon fluorocarbon production, and the wages and salaries of these half million persons accounted for approximately 1 percent of the total United States figure.

Aerosol propellants were an end use of only 49 percent of all fluorocarbons, yet discounting any personal income taxes paid, the aerosol-related manufacturers contributed approximately \$252.7 million in direct tax payments in 1974.

These are economic statistics: what of the uses of fluorocarbons? Fluorocarbon end usage breaks down as follows: aerosol propellants—49 percent, exports—4 percent, refrigerants—28 percent, foamed plastics—7 percent, solvents—5 percent, fluoroplastic materials—4 percent, and other uses—3 percent. They are used by the food, drug, electronics, machine tools, plastics and textile industries, and by hospitals as well. In some cases, we have adequate substitutes: in others, we have none or those that we have are less energy-efficient, less safe, or more expensive for the American consumer. In any case, replacement cost for chemical raw materials and intermediate equipment would be between \$655 and \$735 million; \$400 million for fluorocarbon manu-

facturing equipment; and \$7.5 billion for replacement of refrigeration and air conditioning equipment.

Perhaps it is necessary for us to sacrifice a major U.S. industry, to find alternative employment for 1.5 million American workers, and to take the leading role in solving a global problem for which we can be no more than 50 percent of the solution, but scientists have informed us that if any necessary regulations are in effect by 1978 we can prevent irreparable harm to the environment. The dates for regulation under the committee provisions as opposed to the negative ban amendments are so close as to be negligible, and the effects of waiting for verifiable scientific data to support our decision are minimal.

The committee bill permits the States to impose limitations on the use of aerosols and fluorocarbons that are more stringent than those that may be imposed by EPA and the Congress under the provisions of the bill. This has been our usual approach to the control of pollution, and it is one that I have always supported.

On reflection, however, I now question whether the rationale for State discretion in such areas as air and water pollution are applicable to the particular problem of ozone depletion. Air and water pollution have a direct impact on local values. They affect the immediate environment within which the inhabitants of our villages and cities and States must live. The hazard we are guarding against here, however, does not have any visible localized impact. Rather, it involves the potential pollution of an invisible global shield many miles above the surface of the Earth.

In other words, when we speak of the potential pollution of the stratosphere by fluorocarbons released from the ground, we are speaking of a phenomenon without the localized impact that justifies the exercise of local discretion even when such discretion imposes significant burdens on a national industry that must then try to accommodate a dozen or more different standards.

I therefore recommend both to the Committee on Public Works and to the Senate as a whole that if and when the time comes to impose national regulations on the fluorocarbon industry, we at the same time consider the advisability of a national preemption of such regulatory authority so as to enable a highly important industry to operate within whatever national limitations are believed essential and prudent in the light of the information now being assembled and analyzed.

If these studies do indicate the need to curtail the manner in which fluorocarbons are used, then we will face an important international challenge, and a vital test of the mechanism for international cooperation on environmental pollution that was created as a result of the Stockholm Conference on the Environment in 1972, for we will be dealing with a danger that is global in nature, one that can only be addressed through global understanding and cooperation.

I was present during the presentation in the committee by the Senator from New Mexico of the risks and the hazards. I am persuaded, as he has stated, that there is, within the mechanism established by the committee, every safeguard we can reasonably require.

If the EPA, as it monitors the ongoing studies, should find that there is a hazard more immediate than we have reason to conclude, as a result of everything we have heard, then the EPA has the authority to

impose the ban, subject only to a review by the Congress. It seems to me that this is the kind of protection we are requiring.

In the meantime, let us not lose sight of the fact that we are dealing with a rather large industry, which has a lot of employees. Yes, a lot of what they contribute can be called personal convenience. That is not necessarily sinful. But a lot of the other things that fluorocarbons contribute have to do with refrigeration, which is a pretty essential commodity in the modern world. I believe we have a prudent bill. I believe we have one that faces the contingencies. I believe it is one in which the Congress and the Senate can place its confidence.

I would make only one observation about the overall framework of this committee bill. At such time that as its regulations are imposed, whether immediately as a result of an EPA finding or 2 years hence as a result of studies, I believe the problem of preemption ought to be reviewed on the basis that we are dealing not with localized hazards but global hazards. Whatever prudence dictates as a result of the assessment, as a result of these studies, should be applied uniformly, across the country. Then we will have a job persuading the rest of the world to come along and to cut back on the other half of the fluorocarbon production produced elsewhere.

Mr. BUMPERS. Mr. President, I have some additional scientific data or information from various scientists that I wish to get in the Record. One item relates to an April 27, 1976, meeting that was held in Colorado involving many of the atmospheric scientists of the United States who have provided information to the National Academy of Sciences. Here is a report from Dr. Cicerone, an atmospheric scientist at the University of Michigan to the IMOS committee.

He says:

Thus, our present projections for the global loss of stratospheric ozone follow continued usage of fluorocarbons-11 and -12 at 1974 output rates are 8 to 16 percent, including  $\text{ClNO}_2$ .

An 8 to 16 percent depletion of the ozone. He goes on to say:

I feel confident that if you would contact Dr. Crutzen, Dr. Chang, Rowland, Dr. Molina, Dr. Stolarski of NASA, Drs. McElroy and Wofsy or other experts you will obtain a similar update.

I have ticked off and cataloged the most eminent atmospheric scientists in the United States, including Dr. McElroy, as being in agreement with that statement.

Dr. Donahue, of the University of Michigan, said on February 25, 1976:

The measurements of Anderson confirm our predictions, so some urgency is returning to the CFM (fluorocarbon) matter.

Waiting until 1978 to institute controls may be a luxury we can't afford.

Dr. McElroy's testimony before our committee, 3 months after the testimony that the Senator from New Mexico just read stated:

You have heard about the immediate threat to the stratosphere due to fluorocarbons. I need not repeat the warning. The potential threat is serious and the experimental data acquired during the past several years have strengthened our conviction that this should be the case.

The Packwood amendment says that if there is a rebuttable presumption that we are flirting with disaster, the Administrator should be called upon to rebut that presumption. That is all we are asking

him to do. If he cannot do it, they can continue to manufacture. If he can, the manufacture of fluorocarbons will be banned. If he cannot say that there is no risk involved, the use of fluorocarbons in aerosols will be banned.

Mr. PACKWOOD. The principal argument raised by the Senator from New Mexico dealt with negative burden of proof. It varied between I think, a statement that it was unfair and certainly unwise.

Yet frequently in this Senate we have used the negative burden of proof where a negative burden of proof required an applicant who wanted to do something to be able to prove what he was going to do was safe before we would allow it.

I mention the Marine Mammal Act where we were worried about the pollution of certain types of mammals. Before an applicant can take any of these mammals he has to prove what he is going to do would not be adverse to the intention of the act.

The Federal Food and Drug Act requires consistently that before a drug can be put on the market it must go through all kinds of tests, all reasonable tests that could be considered, and only if the Administrator is satisfied that every precaution has been taken is the drug put on the market. It is a negative burden of proof.

In the Radiation Control Act of 1968, we put in a very specific burden of proof. We said that before a manufacturer can put certain products on the market he had to meet:

The burden of proof being on the manufacturer, if after such presentation the Secretary is satisfied that such defect or failure to comply is not such as to create a significant risk of injury . . .

In all the cases where we thought there was a danger to the public, and sometimes we were not sure exactly what the danger was, we thought there was enough of a danger that we did not want to run the risk. So we said we are not going to allow these products on the market unless those who wish to put them on the market can prove there is no significant risk. In each of those cases we had some weighty problems to consider on the other side.

But I come back again to the issue of fluorocarbons and what they are used for. They are not used to propel missiles. They are used to propel underarm deodorant.

Not a single thing is going to happen to this Nation; we are not going to be endangered, we are not going to have an economic downturn, if instead of fluorocarbons we simply used these things that you push your finger on and mist comes out of it.

The Senator from New York indicated that there might be some adverse economic effects.

#### UP AMENDMENT NO. 313

The Senator from Oregon (Mr. Packwood) proposes unprinted en bloc amendment numbered 313.

The amendment is as follows:

On page 1, line 9, strike through line 5 on page 2 and insert in lieu thereof:  
 "(1) finds that (A) no significant risk to the public health, safety, or welfare is, or may be posed by the discharge of halocarbons into the ambient air from aerosol containers, or (B) the products expected by the Administrator to be available as substitutes for aerosols discharging halocarbons are likely to cause, or contribute to a greater significant risk to the public health or welfare, then

he may, by rule, modify or rescind the prohibition in section 153(a) in whole or in part consistent with that finding, or"

Strike subsection "(c)" in its entirety and renumber subsection "(d)" as "(c)".

On page 2, between lines 11 and 12, insert:

"(3) Finds that a delay of the effective date of the prohibition in section (a) is necessary to avoid unreasonably adverse effects on employment he may, by rule, delay such date to not later than January 1, 1979."

Strike subsection "(c)" in its entirety.

Renumber subsection "(d)" as "(c)".

Mr. PACKWOOD. These two amendments are very simple. One would say that in considering whether or not there is a significant risk in banning the use of fluorocarbons, the Administrator of the EPA is supposed to consider what the alternative risk is if some other procedure is followed.

I offer this amendment because there was a criticism that if we simply asked the Administrator to weigh whether or not there is a significant risk in banning fluorocarbons, and not to consider any alternative, he might not consider the alternative risks.

The other amendment says that if the Administrator finds that a delay of the effective date of the prohibition in section (a) is necessary to avoid unreasonably adverse effects on employment he may, by rule, delay such date to not later than January 1, 1979.

That will give 1 year, to accommodate any adverse employment effects that might result from this ban. I hope that will relieve the fears anyone might have of massive unemployment caused by this type of a ban.

What we have now is a year's extension of employment on anything that had been manufactured before the date of the ban; it still goes on the shelves, and can still be marketed because of the theory that once it is manufactured, something like the fluorocarbons will eventually escape into the atmosphere anyway.

I hope this will allay the fears some have expressed.

Mr. DOMENICI. On behalf of the committee, we are willing to accept the amendments that the distinguished junior Senator from Oregon has presented to the Senate.

The PRESIDING OFFICER. The question is on agreeing to the amendment of the Senator from Oregon (Mr. Packwood), in the nature of a modification of amendment No. 1577.

The amendment (No. 313) was agreed to.

Mr. MOSS. I wish to speak in opposition to the amendment.

I rise in support of section 16 of S. 3219 as reported by the Public Works Committee. This section deals with protection of the ozone layer in the stratosphere and it does so in an appropriate and proper manner. In particular, I urge the defeat of the proposed amendment by the Senator from Oregon (Mr. Packwood). That amendment would have the Congress impose regulation on the use of halocarbons and specifically the chlorofluorocarbons—a group of extraordinarily useful chemicals—prior to the development of the scientific information needed to make the judgments necessary for proper regulation.

The issue of chlorofluorocarbons being released into the atmosphere from aerosol spray containers, refrigeration and air-conditioning systems, and other sources, has been one of considerable concern among our Nation's scientists, the public and the media. People are concerned because of a hypothesis that the released chlorofluorocarbons cause

a reduction in stratospheric ozone—a trace gas in the stratosphere present in less than eight parts per million. However, stratospheric ozone shields the Earth's surface from certain of the Sun's rays believed inimical to life. Therefore, if the hypothesis is correct, then chlorofluorocarbons released into the atmosphere are injurious to the health and welfare of the world's people.

The underlying cause of this concern is the chlorine atoms in the chlorofluorocarbons. The Committee on Aeronautical and Space Sciences first began an inquiry into the effects of chlorine on the upper atmosphere in early 1974. Later in 1974, I ordered the committee staff to look specifically into the effects of the chlorofluorocarbons on the upper atmosphere and held a hearing on this matter in January 1975. Since that time, the committee's Subcommittee on the Upper Atmosphere, chaired by the Senator from Arkansas (Mr. Bumpers), with the ranking minority member, the Senator from New Mexico (Mr. Domenici), has conducted extensive hearings into this matter.

The chlorofluorocarbons are extraordinarily useful chemicals. In fact, our entire refrigeration and air-conditioning industry is dependent on them. This means, in turn, that food processing, building, and many other industries, are dependent on the chlorofluorocarbons. In fact, many of the things we take for granted are possible only because of these chemicals.

The chlorofluorocarbons are so useful because of their unique physical properties and because they are essentially chemically and biologically inert and nontoxic. The concern about some of the chlorofluorocarbon chemicals is that because of their extreme inertness they remain in the atmosphere for a very long time and therefore become thoroughly mixed worldwide in the atmosphere, slowly diffusing upward and eventually entering the stratosphere. This mixing process carrying chlorofluorocarbon molecules into the stratosphere, according to the theory, takes at least 10 years.

The stratosphere is a region of the upper atmosphere, above our weather, where the temperature remains constant or increases with altitude. It begins at anywhere from 5 to 11 miles depending on latitude and time of year and extends up to about 30 miles. On reaching the upper part of the stratosphere, the chlorofluorocarbon molecule is acted upon by solar ultraviolet radiation. This splits the molecule apart, releasing a chlorine atom that quickly reacts with a molecule of stratospheric ozone to form chlorine oxide. This in turn reacts with other trace constituents of the stratosphere to again release the chlorine atom. So, according to the theory, the reaction is cyclical until the chlorine atom eventually collides with a hydrogen atom to form a molecule of hydrogen chloride which might diffuse downward and be washed out of the lower atmosphere. That is the theory—that is the hypothesis which scientists are striving to show is correct or incorrect.

It is clear to me from the hearing record of the committee and subcommittee that what we need is a properly coordinated and funded research effort aimed at developing the much-needed information on the numerous—at least 100—processes and reactions that occur in the upper atmosphere.

No one is against establishing a clearly defined jurisdiction to handle the regulatory aspect of this matter and section 16 of the bill reported by the Public Works Committee does that. The committee language provides that the Administrator of the Environmental Pro-

tection Agency must issue regulations by January 1, 1978, if he finds that halocarbon emissions from aerosol containers may reasonably be anticipated to cause or contribute to the endangerment of the public health or welfare in any way.

Furthermore, no one argues against the need for establishing clearly defined authority to proceed with the research and technology to obtain the necessary information and to assure that the resources of the Government are brought to bear on the scientific and technological aspects of this question as early as possible. Last year the Committee on Aeronautical and Space Sciences recognized the need for an intensified research effort on the upper atmosphere particularly as concerns the impact of chlorofluorocarbons and other chemicals on the ozone layer.

Consequently, the committee amended and reported and the Congress enacted Public Law 94-39. The committee's amendment, section 8 of this law, directs the National Aeronautics and Space Administration to carry out a program of research, technology, and monitoring that will provide for understanding the physics and chemistry of the Earth's upper atmosphere. As a consequence, NASA has established such a program and has prepared an appropriate plan to carry out the direction of the Congress. The committee has reviewed the NASA program and the plan for future activity; we have reviewed the activity of other Federal agencies; and we have found that the research effort is well planned and is proceeding according to the advice of the best scientific experts.

In a relatively short period of time, specific research objectives have been defined and assigned to the various appropriate agencies. Coordinating groups have been established and meet regularly to foster interaction and cooperation and to minimize overlap. Industry itself has mounted a sizable research effort that costs several million dollars a year and it is coordinated with Government effort.

The recommendations of the Federal Task Force on the Inadvertent Modification of the Stratosphere—IMOS—established an ambitious timetable last June. The IMOS report recommends that the scientific data needed to guide the regulatory agencies be provided by January 1, 1978. And, there is every reason to believe that an enormous amount of new information will be available before that time. The bill recommended by the Public Works Committee adheres to this timetable and further strengthens the research and monitoring effort. In fact, the committee bill places additional responsibility on a number of Federal agencies and the National Academy of Sciences.

In this connection, I would like to note that under the committee bill, the National Aeronautics and Space Administration would be:

First, required to continue its programs of research, technology, and monitoring of the stratosphere and coordinate the programs of all Federal agencies relating to research, technology and monitoring of the upper atmosphere;

Second, required to transmit certain reports by October 1, 1976, by October 1, 1977, and from time to time thereafter but at least once each Congress;

Third, permitted to delegate operational monitoring of the stratosphere to another appropriate Federal agency; and

Fourth, authorized additional funds for fiscal year 1976, the transition quarter, and fiscal year 1977.

These matters of course are within the jurisdiction of the committee on Aeronautical and Space Sciences. So I would like to state for the record that the chairman of the Public Works Committee (Mr. Randolph) asked for the views of the Committee on Aeronautical and Space Sciences on these matters. Based on my understanding of the Space Committee's views, I replied to the chairman of the Public Works Committee making a number of suggestions that have been incorporated into the bill reported by the committee.

With respect to the reports required of the National Aeronautics and Space Administration by S. 3219, I want to establish a legislative history on this bill that such reports after October 1, 1977, need not be separate reports to the Congress and the Administrator of the Environmental Protection Agency but can be included as part of the annual report submitted by the President to the Congress on the Nation's aeronautical and space programs. I say this because in the past the Congress has made it clear that it does not want the officials of the National Aeronautics and Space Administration spending their time preparing innumerable reports, which are seldom read.

Some years ago the Congress took action to eliminate the many routine reports required of NASA and consolidated them into the annual report of the President to the Congress. So I want to state for the Record, as part of the legislative history on this bill, that the report required of the National Aeronautics and Space Administration by section 16 of the bill that would become section 152(c) (1) (C) of title I, part B, of the Clean Air Act will be satisfied after October 1, 1977, by including such report as a separate section in the annual Aeronautics and Space Report of the President to the Congress.

Getting back to the main issue of this debate, what it boils down to is whether the release of chlorofluorocarbons into the atmosphere is safe.

What do we mean by safe?

Something is safe if its risks are judged to be acceptable.

Nothing is absolutely free of risk, and consequently nothing can be said to be absolutely safe. There are degrees of risks, and consequently there are degrees of safety. This implies that two different activities are required for determining how safe things are—measuring the risk and judging the acceptability of that risk. Measuring the risk is an objective matter generally involving probability and statistics. It is something that scientists can do. However, judging the acceptability of that risk is a subjective matter. It is a matter of a personal value judgment—it is a value judgment that should be made after the risk is understood.

Before the value judgment is made with respect to the halocarbons in general and to the chlorofluorocarbons specifically, we should understand the risk. To acquire that understanding, research is needed. Currently, there is in progress a variety of research programs to provide the necessary information. Both the committee bill and the amendment by the Senator from Oregon provide for regulatory action by January 1, 1978. The difference is that the committee's bill provides a procedure for implementing regulation as judged from the results of the scientific research program. The amendment proposed by the Senator from Oregon provides that it shall be unlawful to manufacture, produce, import or export from the United States aerosol containers containing halocarbons after December 31, 1977. Thus, the Packwood

amendment would have the Senate make its value judgement without benefit of the information from the research program.

But, the testimony shows a strong consensus of opinion that by January 1978, the data needed to refine the uncertainties that currently surround the ozone depletion question will be developed. And that information is needed to make the best judgmental decision regarding the regulation of a major industry.

Moreover, the legislation as recommended by the Senate Public Works Committee would give the Administrator of the Environmental Protection Agency the authority to regulate at any time should the ozone depletion question become clarified to the point where the Administrator believes that there is significant risk to the public health and welfare from halocarbon emissions from aerosol containers.

The provisions of the committee bill regarding research complement the research efforts initiated under Public Law 94-39. This research now underway will provide important information by January 1, 1978. I believe that an informed regulatory decision should be based on good scientific data and not a mere speculation. The amendment offered by the Senator from Oregon prejudices the result of that research and its usefulness to a proper regulatory procedure. Therefore, I urge the defeat of the amendment offered by the Senator from Oregon and adoption of the language recommended by the committee.

Mr. DOMENICI. I have a rather detailed list of the current and scheduled research programs that will impact upon our ability to determine, by January 1, 1978, as provided in the committee bill, the effect of aerosols on the ozone layer. I ask that that, together with testimony as to skin cancer from Dr. Frederick Urbach of March 1, 1976, be printed in the Record.

#### CURRENT AND SCHEDULED RESEARCH PROGRAMS

The hypothesis has been advanced that fluorocarbons when released into the ambient air rise into the stratosphere and react chemically to reduce the ozone layer. The bill as reported by the Committee recognizes the need for research to determine (1) if there are fluorocarbons in the stratosphere, (2) if there are, whether they indeed react to reduce the ozone layer, (3) if so, the extent of that reduction, and (4) if there is reduction, to what extent if any, that will affect human health and the environment.

Answers to questions one, two, and three are actively being sought by government- and industry-sponsored research and it is acknowledged that work needs to be undertaken on item (4).

While a variety of government agencies are conducting research (*e.g.* NOAA—see "Effects of Ozone Depletion on Weather and Climate") NASA and IMOS, through EPA, have outlined and are conducting focused research programs.

#### A. NASA

The NASA Authorization Act of fiscal year 1976 provides for NASA to develop and carry out a comprehensive program of research, technology, and monitoring of the upper atmospheric phenomena.

Accordingly, the NASA Upper Atmospheric Research Program has been created and is being carried out in two subprograms: (1) the short-term or Assessment Subprogram, and (2) the long-time or Basic Science Subprogram.

#### ASSESSMENT SUBPROGRAM

Objective: To address current problems which have been identified as having the potential to cause harmful effects in the stratosphere in the following areas:

1. Space Shuttle Operations.
2. Fluorocarbons.
3. Aircraft Operations.

#### 4. Other Chemicals, e.g., bromine.

##### Time Frame:

1. Entire Program 3-5 years.
2. First preliminary assessment of fluorocarbon effects—July 1976.
3. Complete assessment and Final Report on fluorocarbon effects—September 1977.

##### Specific Studies for Assessment of Fluorocarbon Effects:

1. Determine, through measurements of fluorocarbon vertical profile, the extent to which fluorocarbons reach the stratosphere.
2. Determine the vertical concentration profile of fluorocarbons.
3. Determine whether fluorocarbons are being dissociated in the stratosphere by differentiating between the vertical profiles of F-11 and F-12.
4. Determine whether the released chlorine is reacting with ozone by measuring the Cl:ClO ratio with spectroscopic techniques.
5. Distinguish between the atomic chlorine from fluorocarbons and that from other chlorine compounds in the stratosphere.
6. Identify the sources and sinks for fluorocarbons and other chlorine compounds in the stratosphere or troposphere.

#### *Other studies to be conducted*

1. Determining the effect of HCl on stratospheric ozone.
2. Determine, through theoretical studies and laboratory experiments, the potential threats posed by discharge of other chemical substances into the upper atmosphere.

#### *Basic science subprogram*

Objective: "To develop an organized solid body of knowledge regarding the physics, chemistry, and transport processes occurring in the stratosphere and other regions of the upper atmosphere."

Time Frame: 5-10 years.

#### *Studies to be conducted at centers for atmospheric research*

1. Theoretical Study Phase.
2. Field Measurement Phase.
3. Laboratory Experiments.

#### **B. IMOS PROGRAM CONDUCTED BY EPA**

In late November, 1975, the IMOS Subcommittee on Biological and Climate Effects Research was formed for the purpose of developing a plan for an integrated Federal stratospheric effects research program.

The Subcommittee's draft report, A Proposed Federal Research Program to Determine the Biological and Climatic Effects of Stratospheric Ozone Reduction calls for the research agenda to be divided into (1) a short-term program aimed at producing "policy-relevant" results within the next two years, and (2) a long-term program addressing basic research questions.

EPA has been designated lead agency to coordinate the research efforts.

The short-term, high priority areas are as follows:

1. Instrumentation Development.
2. Human Health Effects, especially epidemiological studies on non-melanoma skin cancer.

3. Molecular and Cellular Effects, especially damage and repair mechanisms.
4. Effects on Plants at the Organism Level.

The long-term program, scheduled to begin in fiscal 1978, will continue study of the short-term priority areas plus the following areas:

1. Direct effects of increased UV radiation on ecosystems.
2. Direct effects of climate changes.
3. Indirect effects of any climatic changes on ecosystems.

#### **C. INDUSTRY RESEARCH**

During the past year the fluorocarbon-ozone problem has been investigated by a variety of governmental agencies and recommendations have been made for additional study.

In May the Interdepartmental Committee for Atmospheric Science (ICAS) recommended 12 research and monitoring programs to assess possible halocarbon impact.

In July the Panel on Atmospheric Chemistry of the National Academy of Sciences (NAS) identified 19 areas in which relevant data is either non-existent, fragmentary or insufficient.

The ICAS and NAS recommendations now provide a framework for evaluating current research programs and planning new ones.

Table 1 compares recommendations of ICAS with those of NAS and shows industry-sponsored projects under the administration of the Manufacturing Chemists Association (MCA) currently underway seeking the required data. The only major area recommended by ICAS not covered in the MCA program is ozone monitoring. This can better be accomplished by government agencies which have at their command the appropriate instrumentation or the capability to develop it.

Table 2 details industry-funded research since 1973.

Funding through 1975 was in excess of \$1.5 million and more than \$5 million will be spent through 1977.

## FLUOROCARBON/OZONE ISSUE: NEEDS AND PROGRAMS

TABLE 1.—RECOMMENDED STUDIES

ICAS recommendations, May 1975	NAS recommendations, July 1975	MCA supported work (details, table 2)
<b>MAJOR</b>		
Measurements of chlorine and ClO concentrations in the stratosphere.	Measurements of Cl and ClO upper atmosphere concentration profiles.	Ekstrom—Battelle Northwest, Davis—University of Maryland, Nicholls—York University, Stedman—University of Michigan, Young—Xonics, Inc., Howard—NOAA.
Measurements of F-11, F-12, CCl <sub>4</sub> , OH, HO <sub>2</sub> , and other gases at 25–40 km.	Measurements of CH, HCl, HF, NO upper atmosphere concentration profiles.	Lovelock—Reading University, Murcay—University of Denver, Rasmussen—Washington State University, Taylor—University of California (Riverside).
Systematic search for other chlorine-bearing gases in the stratosphere.	Measurements of F-11, F-12, CCl <sub>4</sub> , CH <sub>3</sub> Cl concentration profiles 0–40 km. Determine total chlorine in the atmosphere and compare with sum of all identified compounds.	Lovelock—Reading University, Rasmussen—Washington State University.
Investigate promising research to determine sinks for chlorine in the stratosphere.	Seek out and characterize other possible sinks for removal of chlorofluorocarbons.  Determine source and further reactions of chlorine in stratospheric particulates.	Campbell—Washington State University, Pitts—University of California (Riverside), Mohnen—State University of New York (Albany).
Accelerate program for monitoring of ozone on a global basis. Confirm and improve certain reaction rate measurements crucial to ozone destruction.	Measure rate constants for ClO NO, ClO+O. Cl+HO <sub>2</sub> , Cl+CH <sub>4</sub> .  Measure rate constants for OH+HO <sub>2</sub> ; H, O, NO, O <sub>3</sub> +HO <sub>2</sub> ; O(1D)+H <sub>2</sub> O, CH <sub>4</sub> , N <sub>2</sub> , O <sub>2</sub> . Measure rate constants for OH+CHFCI <sub>3</sub> , CHF <sub>2</sub> Cl, CH <sub>3</sub> Cl. Measurements of solar flux and scattering parameters for the stratosphere. Photolysis parameters for chlorohydrocarbons and chlorofluorocarbons. Laboratory studies of the photolysis of ClO. Measure atmospheric abundance of decomposition products such as COF <sub>2</sub> , COCl <sub>2</sub> , COFCl and determine whether COFCl releases additional Cl.	Birks—University of Illinois, Howard—NOAA.  Thrush—Cambridge University.  Sandorfy—University of Montreal. Davis—University of Maryland,
<b>OTHER</b>		
Obtain a full record of past and present halocarbon production and release.	Obtain accurate data on production and uses of each halocarbon manufactured worldwide.	Manufacturers, Via MCA.
Expand monitoring of F-11, F-12, CCl <sub>4</sub> in the troposphere and develop standards for their measurement.	Sample at low altitude to find additional possible natural and anthropogenic halogen-containing compounds.	

## FLUOROCARBON/OZONE ISSUE: NEEDS AND PROGRAMS—Continued

TABLE 1.—RECOMMENDED STUDIES

ICAS recommendations, May 1975	NAS recommendations, July 1975	MCA supported work (details, table 2)
Study the lifetimes of halocarbons, HCl, and phosgene in the troposphere.		
Expand the stratospheric modeling studies of ozone formation and destruction.	Develop better atmospheric models. Measure global distribution of certain trace gases to improve models.	Chang—ERT, Inc., and consultants. Cunnold—MIT.
Expand the general circulation modeling of the effects of reduced stratospheric ozone on climate.		
Continue study of the effects of reduced stratospheric ozone on humans and the biosphere.	Accurate baseline monitoring of ground level composition and absorption spectrum of "clean air" including measurements of HCl, HF, N <sub>2</sub> O, NO, NO <sub>2</sub> ; monitoring of column-densities of HCl, HF, ClO, OH, NO <sub>2</sub> from ground-level and satellite stations. Obtain kinetic data for all important reactions of bromine, Br+O <sub>3</sub> ; BrO+O, NO, O <sub>3</sub> ; Br+HO <sub>2</sub> ; CH <sub>3</sub> Br+OH.	Ekstrom—Battelle Northwest (CIO).
A. "The Possible Impact of Fluorocarbons and Halocarbons on Ozone," ICAS 18a-FY 75, May 1975, pp.—.		
B. "Interim Report of the Panel on Atmospheric Chemistry, Climatic Impact Committee, Assembly of Mathematical and Physical Sciences, National Research Council," NAS, July 1975, pp. 3-8.		

TABLE 2.—INDUSTRY FUNDED RESEARCH AND PROJECT DESCRIPTIONS

Investigator (listed alphabetically)	University/Institution	Project description
r. John W. Birks.....	University of Illinois.....	Measurement of reaction rate constants at various temperatures to determine activation energies. Method used is a discharge flow technique with molecular beam mass spectrometry for detection purposes. Several reactions are to be measured involving chlorine atoms, ClO radicals, and hydrogen chloride.
Dr. Malcolm J. Campbell and Dr. R. A. Rasmussen.	Washington State University....	Destruction rates of fluorocarbons by natural ionization processes (ion-molecule reactions). Fluorocarbon and chlorocarbon measurements in the northwestern United States, over the Pacific Ocean, and Antarctica—including measurements in the ice cap. Analysis of halocarbons in "antique" air (samples trapped for many years).
Dr. David T. Chang.....	Environmental Research and Technology.	Modeling and sensitivity analyses related to the fluorocarbon/ozone question.
Dr. Derek M. Cunnold.....	Massachusetts Institute of Technology.	A critique of models used to estimate chlorofluorocarbon effects on ozone.
Dr. Douglas D. Davis.....	University of Maryland.....	Completed: An evaluation of laser induced fluorescence as a potential method for measurement of ClO radical concentrations in the stratosphere. The evaluation showed that this does not represent a practical method of measurement. Continuing: Measurement of absorption cross section of the ClO radical.
Dr. Phillip A. Ekstrom.....	Battelle Memorial Institute—Pacific Northwest Laboratories.	Evaluation and demonstration of ground-based millimeter wavelength (93 GHz) observations of stratospheric chlorine oxide radical.
Dr. Carlton J. Howard.....	National Oceanic and Atmospheric Administration (NOAA).	Laser magnetic resonance for ClO radical. Development and demonstration of laser magnetic resonance for ClO radical in the far infrared region ClO chemistry.

TABLE 2.—INDUSTRY FUNDED RESEARCH AND PROJECT DESCRIPTIONS—Continued

Investigator (listed alphabetically)	University/Institution	Project description
Dr. James E. Lovelock.....	University of Reading (United Kingdom).	Completed: A study of the atmospheric concentrations of halocarbons over Western Europe and over the Atlantic Ocean. Continuing: Monitoring activities extending to halocarbons such as methyl halides.
Dr. Volker Mohnen.....	State University of New York (Albany).	Investigation of ion-molecule reactions involving chlorine compounds in the troposphere and stratosphere.
Dr. David G. Murcray.....	University of Denver.....	High resolution infrared measurement of the stratospheric distribution of fluorocarbons, chlorocarbons, halogen compounds, and reactive intermediates. Measurements made in September on the STRATCOM flight are being analyzed (preliminary results were reported at American Geophysical Union meeting, Dec. 12). 2 additional flights made December 1975. Further flights planned.
Dr. Ralph W. Nicholls.....	York University (Canada).....	Laboratory studies of the infrared vibration-rotation spectrum of the ClO radical. Ground-based high resolution atmospheric observations of the electronic spectrum of the ClO radical.
Dr. James N. Pitts and Dr. O. C. Taylor.	University of California (Riverside).	Completed: Measurements of atmospheric concentrations of fluorocarbons over southern California and in the lower stratosphere; reaction rates of fluorocarbons with O(1D) atoms and OH radicals; and stability of fluorocarbons under photochemical smog conditions. Continuing: Currently adapting an experimental chamber capable of simulating stratospheric conditions which will be used to observe the reaction between chlorine and ozone. Of particular emphasis is actual measurement of the catalytic chain length of the reaction, a key quantity in the models in terms of interpreting the significance of reactions between chlorine and ozone.
Dr. R. A. Rasmussen.....	Washington State University....	See Dr. M. J. Campbell above.
Dr. C. Sandorfy.....	University of Montreal (Canada).	Completed: Photoelectron and ultraviolet absorption spectra of fluorocarbons with relationship to high altitude photodissociation.
Dr. Donald H. Stedman.....	University of Michigan.....	Completed: Laboratory studies have demonstrated the feasibility for detecting stratospheric chlorine oxide radicals by chemical conversion to chlorine atoms (by reactions with nitric oxide) accompanied by vacuum ultraviolet resonance fluorescence. Future: In-flight use of this technique may be supported by NASA.
Dr. O. Clifton Taylor.....	University of California (Riverside).	See Dr. J. N. Pitts above.
Dr. Brian A. Thrush.....	Cambridge University (United Kingdom).	Use of laser magnetic resonance to study reactions of the HO <sub>2</sub> radical at concentrations in the stratosphere of importance to the chlorine/ozone reaction. For example, a chain termination process is: $\text{Cl} + \text{HO}_2 \rightarrow \text{HCl} + \text{O}_2$
Dr. Robert A. Young.....	Xonics, Inc.....	Measurement of total stratospheric chlorine by resonance fluorescence. The preliminary experiment was flown on the September STRATCOM balloon. Measurements of important chlorine species are to be made using resonance scattering and photo fragmentation apparatus. NASA is funding Xonics, Inc., to construct a stratospheric simulator and to develop a titration instrument (cf. Stedman) for chlorine oxide capable of being flown on a U-2 aircraft.

### SKIN CANCER

Source: Testimony of Dr. Frederick Urbach, Chairman, Department of Dermatology, Skin and Cancer Hospital, Temple University Medical School, before Bumpers Subcommittee, March 1, 1976.

### OZONE REDUCTION AND SKIN CANCER

It is difficult to determine the relationship between ozone reduction and incidence of skin cancer because:

Ozone levels are not constant and vary according to season, longitude, latitude, and altitude;

The amount of ultraviolet radiation which actually reaches the body varies depending upon—

1. weather conditions
2. cloud cover
3. pollution
4. life style
  - a. type of clothing worn
  - b. how much time spent outdoors
  - c. what time of day spent outdoors
5. skin type—fair skinned people are more susceptible to radiation

Statistics on skin cancer are unreliable

1. Cases frequently are not reported because they can be treated in the physician's office.

2. Adequate studies have not been done at a variety of latitudes.

3. It is not possible to tell whether reports of deaths involving skin cancer were reports of people dying from or with skin cancer.

(See attached quote.)

#### INCIDENCE OF SKIN CANCER

##### 1. Non-melanoma

300,000 new cases per year in U.S. (165/100,000 population)

95+ % cure rate

(i) easily detected

(ii) slow to develop

35,000 reported deaths from 1950-1969

##### 2. Melanoma

8,000 new cases per year (2-10/100,000 population)

40% death rate

42,000 reported deaths from 1950-1969

relationship to ultraviolet radiation not as clear as for non-melanoma skin cancer.

#### POSSIBLE INCREASE IN SKIN CANCER INCIDENCE DUE TO OZONE REDUCTION

A 1% decrease in ozone could lead to a 2% increase in skin cancer.

A 0.04% decrease in ozone over two years of continued U.S. use of aerosols could lead to a 0.08% increase in skin cancer, but studies have not been made to assess the effect of these minimal changes in ultraviolet radiation.

Increased exposure to ultraviolet radiation is comparable to moving south 70 miles per 1% ozone reduction. This means that an 0.04% ozone reduction would be the equivalent of moving south about 2.8 miles.

#### RESEARCH RECOMMENDATIONS

##### *I. Field measurements and instrumentation*

A. More accurate data on present ozone levels near sites where epidemiological data have been or will be collected.

B. Measurement of ultraviolet radiation reaching Earth.

C. Development and use of personal ultraviolet radiations monitors.

D. Improvement of high intensity ultraviolet radiation sources with narrow (monochromatic) and wide (solar simulator) spectra.

##### *II. Epidemiology of skin cancer in man*

A. A program is needed to gather epidemiologic data on prevalence of non-melanoma skin cancer over a wide span of latitudes.

B. Identification of the population at greatest risk.

C. Epidemiologic studies of malignant melanoma.

##### *III. Animal experiments needed to study the relationship of ultraviolet radiation to the development of skin cancer*

"Dr. Urbach. That is the figure given. However, when one goes back to find out whether those 5,000 died because of the skin cancer or died having a skin

cancer, the number that truly died because the skin cancer invaded some vital organ is probably much smaller than that.

"There was a study done in Australia looking at all the death records saying this patient died of skin cancer, going back to the hospital record, and they found they died by getting run over by a truck or had a heart disease or something else and happened to have skin cancer.

"So that, the true death rate is probably much smaller than that."—(Testimony of Dr. Frederick Urbach, March 1, 1976)

Mr. DOMENICI. I have no objection to the amendment of the Senator from Oregon (Mr. Packwood).

That makes the bill worse, even from their side, because the way our bill is drawn, come January 1, 1978, the Administrator must conduct hearings and make findings with reference to whether or not he is going to regulate in whole or in part, ban in whole or in part, aerosol sprays or any part thereof. After the 90 days, the Congress is then given the determination by the Administrator and we have 30 days to approve or disapprove. So, after that 90 days of hearings, if the Administrator decides to ban, Congress can decide that we do not want to ban, or probably, more appropriately, we would support it and say he is right.

On the other hand, if he decides not to ban, we have a 30-day period of time to disapprove and make our own—not recommendations, but our own finding and to make a mandatory determination. So we have a better and far quicker approach without the imposition of an additional year and without the use of a negative burden approach in these very complicated areas.

I have not discussed economics today. I have not entered this quagmire of whether or not we are putting people out of jobs or getting them jobs with a new can that will take the place of this one. Nor have I talked about whether this is a trivial use by Americans or a serious one, because I do not think that would be the least bit relevant, if, as a matter of fact, I thought we should ban this. If I thought we should ban this or if I thought I knew enough today to say we ought to ban it on January 1, 1978, then the economics would be irrelevant, because, in fact, there is no question that it should be banned.

I am not asking anyone to support the committee based upon the trivial use of frivolous products by Americans. I do not want that. I am not asking that they preserve jobs; I am not asking for that. I merely say that this bill provides a rather good—in fact, excellent—regulatory mechanism, a fact-finding mechanism, and promotes the serious investigation of what the true facts are, and we shall know by January 1, 1978.

Nobody discusses this issue without referring to the IMOS report. That report was an interagency study and it came up with the conclusion that there was cause for concern and, if the preliminary facts that they found could be verified, there should be a ban. This administration and Congress have gone along with a National Academy of Sciences study to fill in that next step required by those findings of the IMOS report team.

If nothing else, we ought to let the National Academy of Sciences report. They will not report for 2 or 3 more months. I submit that if they report that aerosols ought to be banned, then the 60-day provision for accelerated hearings and a ban will come into effect under the committee bill and we shall not need the negative ban. If they do not, or

if they are still inconclusive. I think we have provided a rather superb mechanism for carrying on the research up to January 1, 1978, and then doing something about it.

Mr. RANDOLPH. When the committee considered the provisions of this bill dealing with ozone protection, we had before us a proposal to ban aerosol uses of fluorocarbons after January 1, 1978, unless the Environmental Protection Agency found no environmental risk in the continued use of such fluorocarbons. We felt that the record then available was not sufficiently clear to support either a statutory ban on fluorocarbon aerosols or imposing the burden of proof for avoiding such a ban on the manufacturer. In the opinion of the committee, substantial questions remained as to the contribution of fluorocarbons from aerosol cans to ozone depletion and on the degree of environmental risk associated with depletion of ozone from the upper atmosphere. Since the legislation proposed extensive further study of these issues, Committee members felt it was appropriate to make any regulatory decision on a possible ban on fluorocarbon aerosol wait until the studies had been completed.

None of the information which has become available since our consideration of these provisions would justify changing the committee's recommendation. New measurements and new interpretations of data have been presented on both sides of the question. Further scientific study is necessary before a decision can be made to impose controls on aerosol uses of fluorocarbons. I oppose any amendment to section 153 as it was recommended by the Committee.

Mr. MAGNUSON. The Committee on Commerce and the Committee on Public Works have a long history of working together to help solve the pollution problems of this country. While the Committee on Public Works has concentrated its work on protecting against air and water pollution through the regulation of emissions and effluents, the Committee on Commerce has concentrated its work on the control of the products which are responsible for the pollution. The Committee on Commerce has worked long and hard to enact a Toxic Substances Control Act which will provide this kind of product control.

Of particular interest to the Committee on Commerce is section 16 of the committee bill before us which contains authority to protect the ozone layer of our atmosphere from destruction by halocarbons. Sections 153 and 154 of the new part B authorize the regulation of aerosol containers, and section 155 authorizes the regulation of halocarbons released from sources other than aerosol containers.

While the Toxic Substances Control Act is designed to deal with precisely these kinds of problems, the provision contained in the amendments now before us should aid in that task, and I urge my colleagues on the Committee on Commerce and in the Senate to support it.

Nonetheless, through long-standing precedent the regulation of aerosol products and most chemicals falls within the jurisdiction of the Committee on Commerce.

While section 16 of the bill before us warrants our support, it is appropriate to point out that legislation generally dealing with the regulation of chemicals like halocarbons falls within the jurisdiction of the Committee on Commerce, notwithstanding the inclusion of this authority in the Clean Air Act. The Committee on Commerce has

exercised jurisdiction over these issues in the past and intends to do so in the future.

Mr. PACKWOOD. I am just convinced that we are, for no particular reason, saying that we will put a positive burden of proof, rather than a negative burden of proof, in this situation when all scientists agree that there is either imminent danger or possible danger.

There is not anybody who says there is no danger. We are not trading off something for nothing of value. We are trading off fluorocarbon propelled hair spray, deodorant, antiperspirant, for pushbutton, finger-powered, muscle-moved convenience products. Why anybody would object to that kind of trade in the name of safety escapes me.

Mr. DOMENICI. It has been pointed out that there are certain medical products, for which there is no substitute, which use halocarbon aerosols.

It is not the intent of this bill that all such products must be banned if any aerosol products are banned. Under section 153, EPA is required to prohibit or restrict the manufacture, sale, import, export or use of halocarbon aerosol containers only to the extent necessary to avoid endangerment of public health and welfare.

I would like the record to reflect, therefore, that this provision in the committee bill has sufficient latitude to permit the Administrator to exempt essential medical products—which represent a very small percentage of total halocarbon use—from any restriction or prohibition which may be applied to halocarbon aerosols if he determines that such an exemption would not be inconsistent with the purposes of this provision.

Mr. MUSKIE. I agree with the Senator that the committee provision would allow this kind of discretion.

Mr. RANDOLPH. I inquire if my understanding of the development and inclusion of section 158 is correct. I am impressed that this legislation, like all legislation, is less than perfect. It is, as I recall, the product of numerous compromises and lengthy negotiations in which there was a great deal of give and take in an earnest effort to move forward with responsible legislation to address a possible national problem.

It seems to me that this provision, section 158, deserves special comment so that our colleagues in the State legislatures will be better able to appreciate the concerns and considerations that led to inclusion of section 158 of part B. Would the manager of the bill address himself to that subject?

Mr. DOMENICI. By inclusion of section 158, we have specifically authorized States to adopt regulations and standards controlling the manufacture, sale and use of halocarbons which are more stringent than Federal regulations and standards.

We did this out of concern for comity and State rights and to maintain consistency with the basic Clean Air Act we were amending. But we also did it with the realization that many people may suffer a loss of property, income and jobs if precipitous action is taken at the State and local levels without due consideration of the state of scientific knowledge and the other factors which prompted us to establish the national regulatory framework contained in the committee bill. While this section specifically permits more stringent State and local regulation, it is not intended to encourage such action. With the definitive and comprehensive Federal regulatory process now being put in

place by this bill, States and local governments should feel less pressure to pursue their own standards until the studies are completed, the facts are in, and Federal regulations devised.

It is my own hope that those in industry and labor who would be directly affected by State and local regulation of fluorocarbons will, in the spirit of the American democratic system, seek to present their case to the various State and local legislative bodies. In doing so, I invite them to bring these comments to the attention of our colleagues at the State and local level so that they might consider these points as they pursue their important responsibilities to the people they represent.

Mr. BROOKE. I am a cosponsor of this amendment because I believe there is an important principle of law at stake. Indeed, it is the same one the Senate affirmed when it passed the toxic substances control legislation. Simply put, it is that the burden of proof that a chemical is safe ought to come from its distributor and come prior to its distribution. A chemical should be safe beyond any reasonable doubt before it is commercialized.

The fact that we are dealing with a substance now in distribution about which reasonable doubts regarding its safety have been lately raised does not mean that we should neglect the principle. To continue in its commercial distribution, the chemical should not be dangerous to persons or their natural environment. The amendment allows a generous time for reconsideration of all the scientific evidence to see if safety can be demonstrated. But if it cannot, fluorocarbon propellants must go as should any other substance about which there is uncertainty. I am deeply convinced that this is a perfect example of the kind of issue on which we must always be conservative in favor of the environment. We may not ever get a second chance.

#### OZONE PROTECTION

Mr. GARY HART. Included in the Clean Air Amendments of 1976 (S. 3219) as reported by the Senate Public Works Committee is a provision designed to insure protection of the ozone layer in the stratosphere.

The committee proposal provides for studies by the National Academy of Sciences and appropriate research agencies to obtain a more thorough understanding of both the effects of human activities on the ozone layer and the effects of ozone depletion on human health and welfare.

In addition, the committee proposal directs the Administrator of the Environmental Protection Agency to issue regulations restricting or banning the use of halocarbons as aerosol propellants if the Administrator determines that these chemicals "may reasonably be anticipated to cause or contribute to the endangerment of public health or welfare." This determination is to be made by January 1, 1978, with final regulations effective by April 1, 1978, unless disapproved by either House of Congress.

The committee bill also provides that the Administrator can issue regulations prior to January 1, 1978, if he determines that halocarbon emissions from aerosol containers post a "significant risk" to the public health or welfare.

Finally, the committee proposal provides for regulation of halocarbon emissions from sources other than aerosol containers if these emissions "may reasonably be anticipated to cause or contribute to the endangerment of the public health or welfare."

The extent of concern expressed by the committee is perhaps best stated on page 51 of the majority report, which reads:

**This committee believes, since depletion of the ozone layer is of such great potential harmful consequence, it is wise to exercise caution and ensure protection of the public health and welfare.**

I fully share these concerns regarding halocarbons and depletion of the fragile stratospheric ozone layer that protects the Earth from solar ultraviolet radiation. For precisely this reason, I am pleased to join with Senators Packwood, Bumpers, McIntyre, and others in a bipartisan effort to strengthen the ozone protection provision of the committee bill.

The amendment which we have introduced provides for a qualified ban, effective January 1, 1978, on aerosol dispensers containing halocarbon propellants. The amendment also provides that the Administrator of the Environmental Protection Agency may waive or modify this ban prior to the above date in the event that he determines that halocarbon emissions pose no significant threat to the public health, safety, or welfare.

I ask that the complete text of the amendment be printed in the Record.

#### AMENDMENT NO. 1577

On page 58-59, strike section 153 and insert in lieu thereof the following:

"SEC. 153. (a) On and after January 1, 1978, except as provided in subsection (b), it shall be unlawful for any person to manufacture, produce, import or export from the United States, aerosol containers containing halocarbons.

"(b) The Administrator shall consider the available reports, consult with appropriate Federal agencies and scientific entities, and afford the opportunity for public hearings, and if he then

"(1) finds that no significant risk to the public health, safety, or welfare is, or may be posed by the discharge of halocarbons into the ambient air from aerosol containers, then he may, by rule modify or rescind the prohibition in Sec. 153(a) in whole or in part consistent with that finding or

"(2) determines that a particular use of halocarbons in aerosol containers is essential for the public health or welfare and an adequate substitute for halocarbons is not available he may grant specific exemptions from the prohibitions of this Section to allow the use of small quantities in such situations.

"(c) From time to time the Administrator may revise any of the regulations issued pursuant to this Section in the light of new evidence as to the need for such regulations.

"(d) Nothing in this section shall limit, restrict, or otherwise detract from the authority provided in Section 154 of this Act, or any authority under the Consumer Product Safety Act.

**MR. GARY HART.** The evidence is now compelling that certain halocarbons used in many aerosol spray cans and in the refrigeration industry may cause significant changes in the Earth's upper atmosphere. These changes, in turn, cause increases in human skin cancer and other forms of mutation and may significantly affect agricultural food production, climate, and most forms of animal and plant life on the Earth's surface. Since in virtually all cases, harmless or alternative dispensing techniques are already available, most aerosol uses of fluorocarbons are nonessential.

In light of the magnitude of the threat and the weight of current evidence, Congress should establish a limitation on these nonessential uses of halocarbons and give the EPA Administrator the authority to modify that limitation if, at some future date, he determines there is no significant risk to public health and welfare.

The committee's proposals for ozone protection place the administrative burden on the wrong party. For nonessential uses of halocarbons, doubts clearly must be resolved in favor of the protection of public health. The burden of proof must lie with the manufacturers to prove there is no serious danger. As the committee report states, depletion of the ozone layer is a danger of such magnitude that it is wise to err on the side of caution to insure the protection of public health and welfare.

It is imperative that Congress take strong steps at this time to eliminate the use of halocarbons in nonessential aerosols to reduce a growing danger to human health, agriculture and our natural environment.

We now have every scientific reason to believe that halocarbons do deplete the ozone layer. This ozone depletion will result in more solar ultraviolet radiation reaching the Earth's surface, which will have extensive adverse effects on public health and environmental quality.

The risks in this case are of such magnitude that they far outweigh the trivial benefits derived from continued indiscriminate nonessential release of halocarbons.

It is the magnitude of the danger presented by ozone depletion that distinguishes the halocarbon-ozone depletion problem from the other problems treated by the clean air amendments.

Scientists have been studying the ozone layer intensively ever since questions regarding pollution of the stratosphere first arose in conjunction with the SST controversy. In addition, the relationship between halocarbons and ozone depletion has now been subject to 2 full years of related investigation.

#### RECENT REPORTS AND STUDIES OF HALOCARBONS AND OZONE DEPLETION ISSUE

February 1973—The National Academy of Sciences report: "The Biological Impacts of Increased Intensities of Solar Ultraviolet Radiation."

December 1974—Department of Transportation report on the Climatic Impact Assessment Program, entitled "The Effects of Stratospheric Pollution by Aircraft."

April 1975—The National Academy of Sciences report: "Environmental Impact of Stratospheric Flight."

May 1975—Federal Council for Science and Technology report: "The Possible Impact of Fluorocarbons and Halocarbons on Ozone."

June 1975—Report of the Federal Task Force on Inadvertent Modification of the Stratosphere (the IMOS report): "Fluorocarbons and the Environment."

June 1975—National Bureau of Standards report entitled "Chemical Kinetic and Photochemical Data for Modelling Atmospheric Chemistry."

July 1975—Interim report on the "National Academy of Sciences Panel on Atmospheric Chemistry."

September 1975—Environmental Protection Agency report: "Preliminary Economic Impact Assessment of Possible Regulatory Action to Control Atmospheric Emissions of Selected Halocarbons."

September 1975—Seven days of Hearings by the Senate Aeronautical and Space Sciences Ad Hoc Subcommittee on the Upper Atmosphere.

November 1975—State Department report: "The International Aspects of Halocarbon Regulation."

November 1975—National Aeronautics and Space Administration: "The NASA Plan for Research in the Upper Atmosphere."

December 1975—National Cancer Institute report: "Measurements of Ultraviolet Radiation in the United States and Comparisons with Skin Cancer Data."

December 1975—Environmental Protection Agency: "Report on the Problem of Halogenated Air Pollutants and Stratospheric Ozone."

February 1976—Two days of hearings by the Senate Aeronautical and Space Sciences Ad Hoc Subcommittee on the Upper Atmosphere.

February 1976—National Science Foundation: "Report of the IMOS Subcommittee on Biological and Climatic Research."

**Mr. GARY HART.** As documented by recent studies, there is growing awareness that skin cancers are one of the major dangers of ozone depletion. A 1-percent decrease in ozone results in approximately a 2-percent increase in the incidence of skin cancer, or about 30,000 additional cases per year worldwide. Some recent estimates predict an even greater number of cases.

It has been suggested that we simply freeze halocarbon production at current levels and devote further study to the problem. Were we to do this, the ozone shield eventually would be depleted by about 10 percent. Conservative estimates predict that this would result in approximately 500,000 additional cases of skin cancer per year, \$250 million in additional medical treatment costs per year, and 7,500 additional deaths per year due to skin cancers alone. These are costs that we cannot afford to pay.

However, the most significant threat posed by continued ozone depletion lies not in the direct effect on human skin of increased ultraviolet radiation, but rather in its effect on the rest of animal and plant life. If necessary, people could wear additional protective clothing and spend less time outdoors to avoid increased exposure to ultraviolet radiation. But cattle, for example, which get "pink eye" and "cancer eye" from exposure to ultraviolet radiation, do not have the same alternatives as those available to man.

Plants are also threatened because some can barely tolerate the relatively small amount of ultraviolet radiation which normally manages to filter through the ozone shield. Others, including important agricultural crops such as cotton, peas, and soybeans, have been found to be particularly sensitive to ultraviolet damage.

However, the potential adverse effects on agriculture of increased ultraviolet radiation go far beyond this. Recent experiments suggest, for example, that both the stability and effectiveness of many agricultural chemicals are decreased by ultraviolet radiation. Similarly, the behavior patterns of many insects, including those beneficial to agriculture, are highly dependent on ultraviolet radiation, for unlike humans, insects see in the ultraviolet spectrum. Although the precise nature of such behavioral changes has not been thoroughly explored, there is every reason to believe that the net effects would be both significant and detrimental.

Of even greater concern is the possibility the halocarbons in the atmosphere might indirectly precipitate significant climatic changes, including changes in temperature, wind patterns, precipitation, and other weather elements. Again, the nature and extent of these changes cannot be predicted with total certainty on the basis of present knowledge, but we do know enough to realize that the potential for significant climatic effects does exist.

The possible, and in many cases probable, effects of increased ultraviolet radiation span virtually the entire range of aquatic and terrestrial ecosystems, from microscopic bacteria to man. Scientists have not yet specifically identified every last possibility, but the general picture they paint is clear. Their concern is reflected in the fact that most of the atmospheric scientists testifying before the Senate Subcommittee on the Upper Atmosphere have asked for an immediate ban on nonessential aerosol uses.

What we have to weigh in reaching a decision regarding the regulation of halocarbons is the potential magnitude of the dangers on the one hand, and the benefits derived from or associated with halocarbon emissions on the other. Approximately one-half of the halocarbons produced are used as propellants in aerosol containers for dispensing personal care products, especially hairsprays, deodorants, and antiperspirants. For more of these uses, alternative propellants or mechanisms can be employed. But in any event, convenient hairsprays and deodorants just are not worth taking the risks associated with high levels of ultraviolet radiation.

A major problem has been clearly identified. We should read the handwriting on the wall and ban the nonessential uses of halocarbons before this problem becomes a crisis.

Mr. DOLE. Major concern was first expressed in 1974 about the possible effects of aerosol sprays and other fluorocarbon products on the stratosphere, which surrounds the Earth. A layer of ozone gas within that stratosphere protects human beings from harmful ultraviolet radiation from the Sun. There is speculation among some scientists that fluorocarbons may react with the ozone layer in such a way to gradually destroy it, allowing ultraviolet radiation to reach the Earth's surface in harmful quantities.

In response to that speculation, a number of major research projects were begun, and are still underway, to determine more precisely whether or not such a danger actually exists. In the meantime, Congress is faced with the decision of how best to protect the public's health and safety in the event that continued research should prove the risk factor associated with aerosol sprays and similar products.

S. 3219, as reported by the Senate Public Works Committee, would direct the Environmental Protection Agency to regulate fluorocarbon emission sources if future studies indicate that the emissions may "reasonably" be expected to endanger the public health and safety. A report is to be issued, and any necessary regulations proposed, by January 1, 1978. I feel this is a reasonable and responsible procedure for dealing with this crucial issue. The provision does, in effect, require that hard, concrete evidence be presented before we enact Federal controls to limit or ban the manufacture and use of fluorocarbon products.

#### EVIDENCE NOT NOW AVAILABLE

Testimony presented during committee hearings indicated no immediate danger to public health. In fact, it is my understanding that there is at this time no experimental evidence that the ozone layer is actually damaged by fluorocarbons, and this lack of evidence

was the basis for earlier decisions by the U.S. Consumer Products Safety Commission to reject petitions for banning or restricting certain uses of fluorocarbons. Before such concrete evidence is available, Congress would be ill-advised to disrupt what has become a major industry in this country, purely on the basis of an unproved hypothesis. There are about 25 fluorocarbon producers worldwide, 6 of which are in the United States, with 14 plants in 9 States. One of these, located in my own State of Kansas, manufactures three common fluorocarbons which are marketed as refrigerants, aerosol propellants, and blowing agents. Some 4,000 people in the United States are employed in fluorocarbon manufacture, sales, and research. More than a million additional jobs in this country are dependent on fluorocarbon use. Commonsense would indicate that no hasty or irreversible decisions should be made which would deal a deathblow to this legitimate enterprise.

In the meantime, major research proceeds on relevant aspects of the matter. Our understanding of the causes of ozone changes is incomplete, both in terms of its causes and its effects. Fluorocarbon producers are supporting this scientific research, providing some \$5 million in research aid over a 3-year period. Further studies by the National Academy of Sciences are required by the pending bill, and several Federal agencies are being directed to study the potential effects of human activities on the ozone layer. Within 2 years, based on these intensive and extensive studies, the Environmental Protection Agency must prepare a summary report for the Congress covering all scientific knowledge about the ozone depletion problem along with recommendations for longer term research efforts. If EPA determines at that time that regulation of fluorocarbons is needed to avoid danger to public health and welfare, it must immediately issue regulations to restrict or prohibit the manufacture, sale, import, export, or use of aerosol containers. I believe that this approach, based as it is upon a substantive finding of reasonable danger, is a practical approach for protecting the interests of both public health and industry. I support the recommendations to this effect contained within the committee's version of this bill.

Mr. McINTYRE. I support the modifications of my colleague, Mr. Packwood.

If a ban or other restrictions are necessary to control the use of fluorocarbons in aerosols containing fluorocarbons, the impact of such restrictions would be softened.

The modified amendment would still give the EPA Administrator up to January 1, 1979, to delay the effective date of his prohibitions to avoid unreasonably adverse effects on employment.

Manufacturers of the chemicals used to make fluorocarbons and the makers of fluorocarbons as well as aerosol packagers would have additional time to phase out use of fluorocarbons.

As a result, aerosol packagers could switch to alternatives like finger pump bottles of acceptable propellants in a timely way, reducing the prospect of unemployment caused by a ban on fluorocarbons.

At the same time, the amendment preserves the principle under which the EPA Administrator will decide by January 1, 1978, whether to waive a ban on nonessential uses of aerosols containing fluorocarbons.

The yeas and nays were ordered.

The result was—yeas 28, nays 64, as follows:

[Rollcall Votes No. 480 Leg.]

YEAS—28

Abourezk	Eastland	McIntyre
Bayh	Hart, Gary	Metcalf
Brooke	Haskell	Nelson
Bumpers	Hatfield	Packwood
Case	Hathaway	Proxmire
Church	Humphrey	Scott, Hugh
Clark	Kennedy	Stafford
Cranston	Leahy	Stevens
Culver	Mansfield	
Durkin	Mathias	

NAYS—64

Allen	Gravel	Pastore
Baker	Griffin	Pearson
Bartlett	Hansen	Pell
Beall	Helms	Percy
Bellmon	Hollings	Randolph
Bentsen	Hruska	Ribicoff
Buckley	Huddleston	Roth
Burdick	Inouye	Scott, William L.
Byrd, Harry F., Jr.	Jackson	Sparkman
Byrd, Robert C.	Javits	Stennis
Cannon	Johnston	Stevenson
Chiles	Laxalt	Stone
Curtis	Long	Symington
Dole	Magnuson	Taft
Domenici	McClellan	Talmadge
Eagleton	McClure	Thurmond
Fannin	McGee	Tower
Fong	Montoya	Weicker
Ford	Morgan	Williams
Garn	Moss	Young
Glenn	Muskie	
Goldwater	Nunn	

NOT VOTING—8

Biden	Hartke	Schweiker
Brock	McGovern	Tunney
Hart, Philip A.	Mondale	

So Mr. Packwood's amendment was rejected.

AMENDMENT NO. 2115

The Senator from Virginia (Mr. William L. Scott), for himself, Mr. Bartlett, Mr. Curtis, Mr. Eastland, Mr. Fannin, Mr. Garn, Mr. Goldwater, Mr. Helms, and Mr. Thurmond, proposes an amendment numbered 2115.

On page 1, after line 2, insert the following:

"SECTION 1. Section 101(b) (1) of the Clean Air Act is amended to read as follows:

"(1) to protect and enhance the quality of the Nation's air resources by establishing, achieving, and maintaining national ambient air quality standards, standards of performance for new stationary sources, and national emission standards for hazardous air pollutants so as to promote the public health and welfare and the productive capacity of the Nation, but nothing in this Act is intended to require or provide for the establishment of Federal standards more stringent than primary and secondary ambient air quality standards;"

On page 1, line 3, strike out "SECTION 1" and insert "Sec. 2".

On page 2, line 18, strike out "2" and insert "3".

On page 2, line 21, strike out "4, prevention of significant deterioration,".

On page 4, line 20, strike out "3" and insert "4".

On page 5, line 1, strike out "4" and insert "5".

On page 9, beginning with line 8, strike out all through "(b)" in line 19 and insert in lieu thereof "Sec. 6. (a)".

On page 10, line 9, strike out "(c)" and insert in lieu thereof "(b)".

On page 10, beginning with line 17, strike out all through "(iii)" in line 18 and insert in lieu thereof "and (ii)".

On page 10, line 19, strike out "(d)" and insert in lieu thereof "(c)".

On page 10, line 21, strike out all following the quotation marks through the semicolon in line 22.

On page 10, line 25, strike out "(c)" and insert in lieu thereof "(d)".

On page 11, line 3, strike out all after "section 111" to the comma in line 5.

On page 11, beginning with line 6, strike out all through line 21 on page 20.

On page 20, line 24, strike out "(h)" and insert in lieu thereof "(g)".

MR. WILLIAM L. SCOTT. A number of us have made somewhat lengthy talks on one or more occasions within the past week in opposition to the provisions of this bill and Federal regulations that deny any significant deterioration of air quality in clean or clean air areas when the air quality would still be substantially above that determined by the Administrator of the Environmental Protection Agency, pursuant to statutory authority, as necessary for the protection of the health and welfare of citizens.

As we know, the Administrator has general authority under the 1970 Clean Air Act to establish nationwide primary standards high enough to protect the health of the people of the country and secondary standards high enough to protect their welfare. The act specifically defines welfare in section 302(h) as including but not limited to "effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being." This statutory authority is nationwide in scope. However, section 6 of the committee bill and regulations of the Environmental Protection Agency would prohibit significant deterioration of air in local areas where the air is cleaner or of higher quality than the national ambient air quality standards. In my opinion, the Congress never intended by the 1970 act to prevent economic growth, development of industry and jobs in parts of the country where air quality is well above national limits designed to protect public health and welfare. In my opinion also, it would be unwise for the Congress now through this bill, in effect, to provide statutory authority where none now exists to prohibit significant deterioration of air quality in rural areas with no health problem.

The amendment has substantially the same effect as the one I previously offered to the Moss amendment on Tuesday of this week but this one today is of the first degree and offered directly to the bill. In my opinion, the nondegradation policy now being followed by the Environmental Protection Agency is against the best interests of the country. It would appear to strike a balance between a clean wholesome environment and retention of the right of our economy to grow, plants to be constructed, and our standard of living retained or enhanced.  
[See sec. 160]

MR. WILLIAM L. SCOTT. I would like for us to be able to look back over the years while we are still trying to live by "clean air alone" and understand the reasons—and I hope this does not happen—for problems in obtaining sufficient energy, food, clothing, automobiles, and adequate employment for the people of this country.

Over and above the primary and secondary nationwide standards under existing law, the States and localities can require still higher

air quality standards to meet special situations within their areas if they choose to do so, similar to the police power to regulate health and morals reserved to the States and the people under the 10th amendment to the Constitution. The more I have studied air quality control, the more I have become convinced that our insistence upon the pristine air concept in Federal legislation, is leading to economic stagnation.

Mr. BUCKLEY. This amendment offers the Senate a clear choice—do we want a policy of protecting clean air areas or do we not? Do we want to rely on the existing ambient standards, or do we want to create a margin of safety for future generations.

I believe that the reasonable nondegradation policy in this bill is wise public policy for the future.

Passage of this amendment would encourage uncontrolled pollution up to the ambient standard, driving industry and jobs away from the cities and into remote rural areas where lax pollution control would be encouraged.

Mr. MUSKIE. The substance of this amendment has, I think, effectively been discussed thoroughly in the debate on the other nondegradation amendments.

For the reasons the committee opposed those amendments, it opposes this amendment.

The PRESIDING OFFICER. The question is on agreeing to the amendment of the Senator from Virginia.

The yeas and nays have been ordered.

The result was—yeas 20, nays 70, as follows:

[Rollcall Vote No. 481 Leg.]

YEAS—20

Allen	Goldwater	McClure
Bartlett	Griffin	Scott, William L.
Bellmon	Hansen	Stennis
Curtis	Helms	Thurmond
Eastland	Hruska	Tower
Fannin	Laxalt	Young
Garn	McClellan	

NAYS—70

Abourezk	Glenn	Nelson
Baker	Gravel	Nunn
Bayh	Hart, Gary	Packwood
Beall	Haskell	Pastore
Bentsen	Hatfield	Pearson
Brooke	Hathaway	Pell
Buckley	Hollings	Percy
Bumpers	Huddleston	Proxmire
Burdick	Humphrey	Randolph
Byrd, Harry F., Jr.	Inouye	Ribicoff
Byrd, Robert C.	Jackson	Roth
Cannon	Javits	Scott, Hugh
Case	Johnston	Sparkman
Chiles	Leahy	Stafford
Church	Magnuson	Stevens
Clark	Mansfield	Stevenson
Cranston	Mathias	Stone
Culver	McGee	Symington
Dole	McIntyre	Taft
Domenici	Mondale	Talmadge
Durkin	Montoya	Weicker
Eagleton	Morgan	Williams
Fong	Moss	
Ford	Muskie	

## NOT VOTING—10

Biden  
Brock  
Hart, Philip A.  
Hartke

Kennedy  
Long  
McGovern  
Metcalf

Schweiker  
Tunney

So Mr. William L. Scott's amendment (No. 2115) was rejected.

The bill was ordered to be engrossed for a third reading, and was read the third time.

Mr. ALLEN. In what areas does the bill give the States new flexibility they do not now enjoy under current regulations?

Mr. MUSKIE. The States would issue permits to new sources. At present permits are issued totally at the discretion of EPA and by EPA. [Sec. 165]

The States gain a veto over action by the Federal Government to reclassify Federal lands as class I areas. Presently other Federal agencies are to consult States but can with EPA approval unilaterally make the reclassification.

The bill allows the State to decide to issue a permit to a source even if it fails to pass the stringent class I increments. This occurs after the Federal Land Manager presents the case for such issuance based on air quality values. The decision is then left to the State.

Presently under EPA regulations no source, under any conditions, may receive a permit if it fails to pass the test of the class I increment.

States, now under EPA regulations, must devise some way of controlling small sources, nonmajor emitters, or else they may use up the increments and leave no room for further growth. The committee bill does not count such sources against the increments, thereby leaving more room for major emitters. The States thereby have greater flexibility in reviewing and authorizing various mixes of major and non-major emitters.

Present law requires that if States ever take over the program, EPA can still second guess all actions. Under the bill, EPA may only go to court to stop a permit and then EPA has the burden to show that the State permit violates the requirements of the statute as to best available technology, increments, et cetera.

Mr. ALLEN. Is it the intent of the committee that EPA have veto power over actions the States may take in granting permits or classifying areas?

Mr. MUSKIE. EPA goes to court if it finds a State permit to be invalid under the committee bill.

EPA has no approval power in States reclassifying land. The Federal Land Manager has veto power if Federal lands are involved. Any State decision on State lands is solely a State decision.

Mr. ALLEN. Is it not true the committee intends the State to have maximum flexibility in determining what constitutes "best available control technology"?

Mr. MUSKIE. States have full flexibility to weigh factors. This includes insuring long-term growth by leaving room for future sources by requiring improved technology on the first sources who apply. The State cannot require less than the Federal new source performance standards.

Beyond that, the State has full flexibility, with guidance that it should maximize emission reductions that are achievable.

Mr. ALLEN. Is it not the intent of the committee that the Land Manager should only attempt to intervene in the granting of a permit by the State where it is clear that the siting of a proposed facility will have a definite adverse impact on the air quality of the class I area?

Mr. MUSKIE. In response to this question the Federal Land Manager is to intervene whenever he has a reasonable concern. Intervention merely begins the process. It is the trigger. It does not decide the outcome. This intervention creates the analysis. His judgment must then be based on that analysis. He has a positive mandate to protect the air quality values of the Federal areas affected.

Mr. ALLEN. If it should be determined that the allowable increments in classified areas are in fact too small and will restrict necessary and desirable development, is it not the intent of the committee that the increments will be reviewed and possibly adjusted for class II areas so long as the national health and welfare standards are not violated?

Mr. MUSKIE. The committee intends for the increments to be studied. The results could go either way. Class II may be too lenient, or too strict. Any possible adjustment at a later date will take into account the Commission's report. The increments have already been subjected to 3-4 years of analysis, but we expect to learn more through further studies during implementation.

Mr. ALLEN. I would like to ask the Senator from N.Y. (Mr. Buckley) and the committee chairman (Mr. Randolph) and the Senator from Tennessee (Mr. Baker) if they agree with the distinguished Senator from Maine in his responses to my inquiries as being the intent of the Senate in the enactment of S. 3219.

Mr. RANDOLPH. I agree that Mr. Muskie's responses correctly respond to Mr. Allen's questions and reflect the committees views on the Senate's intent.

Mr. BUCKLEY. I agree.

Mr. BAKER. The Senator's answers reflect my view of congressional intent of the legislation.

#### EPA LAWYERS TO REPRESENT THEMSELVES IN CIVIL LITIGATION

Mr. JAVITS. The amendment I intend to offer would allow EPA to represent itself in all civil litigation cases except for enforcement cases where the Justice Department would still represent EPA unless Justice gives no indication that it will handle the case after a reasonable time period.

Present law does not allow EPA to represent itself in cases under the Clean Air Act and this has caused significant problems in the administration of the act. First, the issues that are litigated are quite complex and technical and the EPA lawyers who deal with the problem on a regular basis are usually better equipped to participate in such cases dealing with EPA's regulations. In a number of instances there have been conflicts between Justice Department lawyers and EPA lawyers over the handling of issues which have made it more difficult to successfully prosecute cases under the Clean Air Act. Apparently the problems between the EPA attorneys and Justice Department attorneys have not been resolved despite formal complaints from EPA and discussions on the subject.

Additionally, there is a duplication of effort in having the EPA attorneys and the Justice Department attorneys both working on the same case when it is always necessary for the EPA attorneys to be working on that case from its initial stages. Finally there is extensive precedent for an agency such as EPA representing itself in civil litigation as similar grants of authority have been given to the Federal Trade Commission, National Labor Relations Board, Securities and Exchange Commission, Federal Communications Commission, Federal Maritime Commission, Nuclear Regulatory Commission, Interstate Commerce Commission, the Secretary of Agriculture, and the Secretary of Labor. This is only a partial list of the various agencies and departments which are able to represent themselves in some type of litigation.

The House was very concerned about this problem and put a provision in this bill which would allow EPA to represent itself in all types of civil litigation. The Justice Department could intervene with the permission of the court in any case in which the Administrator was a party. The concern of the House Committee on this subject was expressed in the Committee report on pages 272-277. I ask that these pages from the House committee report be placed in the Record.

#### SECTION 311—CIVIL LITIGATION

##### BACKGROUND

Section 305 of the present Clean Air Act provides that [t]he Administrator shall request the Attorney General to appear and represent him in any civil action instituted under this Act to which the Administrator is a party. Unless the Attorney General notifies the Administrator that he will appear in such action, within a reasonable time, attorneys appointed by the Administrator shall appear and represent him."

Under this language, the Justice Department has represented the Administrator in almost all the civil litigation under the Act. Occasionally, attorneys appointed by the Administrator have been permitted to participate in oral arguments. However, this has been the rare exception rather than the rule.

While the final briefs are submitted by the Justice Department or the U.S. Attorney's office and oral argument is conducted by these attorneys, the basic preparation for the case is done by the attorneys appointed by the Administrator. This basic preparation involves summarizing the facts in any case, preparing a draft brief or motions, marshalling evidence in case of enforcement actions, and explaining the technical issues underlying any rule which may be under challenge. Through this process it was hoped that the courts would have the benefit of the arguments and facts which would most illuminate the issues before them. It was also hoped that the Agency's position would have complete and effective representation in civil litigation.

Unfortunately, these hopes have not been fully realized. In fact, these hopes appear in too many cases to have been altogether illusory.

There have been several fundamental and serious problems which have become apparent in the representation of the Agency by the Justice Department. Among these are the following:

A. The issues which the Administrator is required to litigate are often complex, highly technical issues which require special expertise and backgrounds in fields such as meteorology, topography, health effects, research photochemistry, and detailed familiarity with environmental legislation. The Administrator's attorneys have this special background; in general, Justice Department attorneys do not.

The technicality and complexity of the issues in litigation under this Act is evident from the opinions in cases such as *Ethyl Corp. v. EPA*, F. 2d (D.C. Cir. 1976); *Amoco Oil Co. v. EPA*, (D.C. Cir. 1975); *Texas v. EPA*, F. 2d (5th Cir.). Attorneys for the Justice Department, and particularly the local U.S. attorneys, lack the necessary specialized familiarity with these matters and disciplines. They become aware of an issue only when a case is filed challenging

a rule of the Administrator. On the other hand, the attorneys appointed by the Administrator have been actively involved in advising the air pollution control program in the development, proposal, and promulgation of the rule under challenge and have such a specialized background.

Several illustrative instances of this problem are presented here. In one case a Justice Department attorney was unable to answer the Court's questions as to whether a city which is "clean" for one pollutant might be "dirty" for another one. In another case, a local U.S. attorney who had requested participation in oral argument by one of the Administrator's attorneys on a technical issue, was prohibited from doing so by the Justice Department in Washington.

B. In some instances, the Justice Department has failed to consult the Agency adequately, with resulting harm to proper judicial administration and effective representation.

There have been numerous instances of inadequate (and sometimes nearly complete lack of) consultation by the Justice Department. In one instance, EPA attorneys prepared a brief for the Justice Department addressing all major issues in litigation. The Justice Department attorney chose to omit one of EPA's arguments entirely. The Court subsequently remanded the case, relying heavily on the Administrator's failure to respond to this particular issue.<sup>1</sup> In another case, without knowledge or consent of the Administrator or his attorneys, the Justice Department presented the Court with an extremely restrictive interpretation of the emergency powers provision. If this view had been accepted by the Court, it would have made future use of that provision nearly impossible.<sup>2</sup> In still a third case (*Montgomery Environmental Coalition v. Washington Suburban Sanitary Commission*) the court specifically asked for EPA to file a brief setting forth the Agency's views. The brief was prepared by EPA, responding to all issues which the court had raised. However, the Department of Justice cut the draft brief prepared by the Agency to five pages, eliminating virtually all substantive discussion and filed this truncated version without any consultation with the Agency. At oral argument, one of the judges complained about the failure of the Agency to respond adequately in the brief to the court's request.

C. In some cases the proper administration of the Clean Air Act has been adversely affected by Justice Department representation.

Here again, illustrative examples will indicate the nature of the problem. In one case, the Justice Department sought to defend EPA's rule by arguing that the case was not ripe until specific enforcement actions were brought. That approach, if adopted, would have greatly delayed any judicial resolution of the issue and left the Agency and the contesting State in a situation of uncertainty, harmful to progressing with cleaning up the air. Under strong EPA pressure, Justice Department reversed its stand at the last minute. In a footnote to the final opinion the Court states that the issue in question was "clearly ripe for adjudication."<sup>3</sup> In other cases, despite legislative language, clear history, and court decisions to the contrary and despite repeated EPA opposition, the Justice Department persists in defending citizen suits to compel EPA to issue regulations by arguing that section 304 authorizes suits to compel enforcement, but not to compel issuance of regulations.<sup>4</sup>

Furthermore, several enforcement cases have languished at the Justice Department for over 16 months after the cases were referred from EPA to the Justice Department before the suits were filed. This hinders enforcement efforts and allows evidence to grow stale and perhaps unusable.

D. In some instances, the Justice Department finds itself in a conflict of interest when it tries to represent both the Administrator and other Federal agencies at various times.

Thus, for example in suits brought by States to compel Federal facilities to comply with State pollution control plans mandated by Federal law, Justice Department attorneys have defended the Federal facilities by arguing that they are immune from State legal requirements.<sup>5</sup> Clearly, the Clean Air Act's section 118 provides to the contrary.

This problem was highlighted even more clearly in the case of *S.C.R.A.P. v. Interstate Commerce Commission*. In that case, the Agency sought permission of

<sup>1</sup> *Portland Cement Assn. v. Ruckelshaus*, 513 F. 2d 506 (D.C. Cir. 1975).

<sup>2</sup> *California Lung Association v. Train* No. 75-1044—WPG (C.D. Cal., 1975).

<sup>3</sup> *Pennsylvania v. EPA*, F. 2d 500 F. 2d 246 (3d Cir., 1974).

<sup>4</sup> *Metropolitan Washington Coalition for Clean Air v. District of Columbia*, 511 F. 2d 809 (D.C. Cir. 1975).

<sup>5</sup> See section 113 of this report, *supra*.

the Solicitor General to submit a friend of the court brief presenting EPA's views. Permission was denied.

E. Despite complaints expressed by EPA attorneys and General Counsel, these problems have not been corrected.

On at least two occasions formal letters of complaint regarding these and other issues have been transmitted from EPA to the Justice Department.<sup>6</sup> Despite these and informal expressions of concern, the aforementioned problems remain largely unabated.

F. Present practice results in wasteful, time consuming and expensive "double staffing" which can and should be eliminated.

By having Justice Department attorneys and attorneys for the Administrator both preparing for litigation in which the Administrator is a party, the current law results in wasteful duplication of efforts. This is an expensive and needless result. Assigning the Administrator the authority to be represented by his own attorneys would eliminate this waste. It would not result in any additional expense, since the Administrator's attorneys already work on preparation of litigation in which he is involved (only to have these efforts duplicated at the Justice Department).

*Precedent.*—It was with these difficulties in mind that the Committee turned its attention to the issue of representation in civil litigation. In doing so, the Committee examined the precedents for self-representation in other laws.

Precedents for self-representation in civil litigation are abundant and apply both to independent regulatory agencies and to executive agencies. The agencies and Commissions which are authorized to represent themselves in civil litigation include (or have included) the following:

- (1) Federal Trade Commission (15 U.S.C. § 56).
- (2) National Labor Relations Board (29 U.S.C. 154(a)).
- (3) Equal Employment Opportunity Commission (42 U.S.C. 2000e-4(b)(2)).
- (4) Securities and Exchange Commission (15 U.S.C. §§ 77-8).
- (5) Secretary of Transportation (authority to seek injunction against transportation of material that presents an imminent hazard (49 U.S.C. § 1810(b) (Feb. 1975 Supp.)).
- (6) Consumer Product Safety Commission (authority to represent itself in action to seize imminently hazardous product, 15 U.S.C. § 2061(a)(f)); see also CPSC bill reported by Commerce Committee this year).
- (7) Federal Communications Commission; Federal Maritime Commission, Nuclear Regulatory Commission, Secretary of Agriculture (28 U.S.C. 2348).
- (8) Interstate Commerce Commission (28 U.S.C. 2323, 2348).
- (9) Secretary of Labor (29 U.S.C. 308).

Most recently, the House of Representatives approved the Conference Report on the "Consumer Product Safety Commission Improvement Act of 1976" which in section 11 conferred upon the Commission the right of self-representation in criminal as well as civil litigation.

Concern of the Justice Department.—In the Justice Department's letter of March 5, 1976, to the Committee, the following basic concerns were expressed:

(1) that Justice Department representation is necessary in order "to assert uniform positions and present consistent arguments"; (2) that Justice Department representation is "the natural vehicle for mediating differences within the Government" when agencies' policies conflict and that such mediation is preferable to airing "unseemingly conflicts" in court; (3) that the Solicitor General's role in screening agency appeals to the Courts should not be abrogated; and (4) that because of EPA's regional structure, "there is a substantial prospect that EPA enforcement of pollution control laws could be uneven and develop regional peculiarities."

The Committee reviewed these concerns but did not find them persuasive.

In response to the first point, the very technical nature of most of the issues in the Clean Air Act litigation—e.g. the extent of health risks associated with a certain pollutant or the technological capability of some pollution control equipment—is such that there is no need for a Government-wide uniform legal position. The Committee also felt that under section 311 the Justice Department could intervene with the court's permission on any issue on which that Department concludes requires uniformity of interpretation in the national interest.

<sup>6</sup> See e.g. Letter from Alan G. Kirk, EPA General Counsel, to Wallace Johnson, Assistant Attorney General, "Re: *NRDC v. Train*", December 16, 1974.

On the second point, the Committee's concern about actual or apparent conflict of interest was felt to outweigh the Justice Department's concern about the unseemliness of governmental agencies disagreeing in public. Furthermore, the Committee was concerned that "mediation" might result in substitution of the views of the Administration for those of the Administrator of the Agency chosen by Congress to execute and administer the Act. The Courts might thus be deprived of the views of the Agency with special knowledge and expertise.

With respect to the third point, the Committee agrees that the Supreme Court's ability to place reliance upon the Solicitor General in submitting cases for its consideration is valuable to the functioning of the Court and should be preserved. However, it would not demean that special relationship to provide by this amendment that EPA may brief and argue its own cases once the Solicitor General had approved a petition for certiorari and the Court had approved it. Moreover, section 311 of the bill does not preclude the Solicitor General from advising the Court against accepting a case which the Administrator seeks to appeal to the Supreme Court. The bill merely prevents the Attorney General from setting up a barrier to an appeal by the Administrator which the Court may wish to hear.

Finally, in response to the fourth point, the Committee concluded that EPA is no more regionally structured than the Justice Department, where individual U.S. Attorneys operate with very substantial autonomy. In fact, there is probably greater central control within EPA, where all significant enforcement action is submitted to Washington for review in furtherance of national enforcement policies.

#### COMMITTEE PROPOSAL

Section 311 of the Committee bill, like a comparable provision in the Federal Trade Commission Act, authorizes attorneys appointed by the Administrator to represent the Agency in civil litigation under this Act. This authority would not, however, permit the Administrator's attorneys to appear in criminal cases.

The purpose of this provision is to resolve the problems referred to in the background discussion. In no event would this provision preclude the Justice Department from intervening with the court's permission in a civil case under the Act to which the Administrator was a party. Nor would it preclude the Solicitor General from recommending against a grant of certiorari by the Supreme Court in a case which the Administrator seeks to appeal. The provision would permit the Attorney General to represent the Administrator in the U.S. Supreme Court in lieu of the Administrator's attorneys if the Attorney General wished to do so.

The Committee bill also contains express authority for the courts to award attorneys fees and expert witness fees in two situations.<sup>7</sup> The first situation is when the Administrator initiates an enforcement action under section 113 of the Act, which the court finds was unreasonable. The second situation is in judicial review proceedings under section 307 of the Act when the court determines such award is appropriate.

The purposes of these provisions are several. In the case of enforcement actions by the Administrator, the purpose of the provision is to provide protection for parties against wholly unwarranted enforcement actions by the Administrator and to restrain the Administrator from over-zealous enforcement.<sup>8</sup>

In the case of the section 307 judicial review litigation, the purposes of the authority to award fees are, as in the former situation, not only to discourage frivolous litigation, but also to encourage litigation which will assure proper implementation and administration of the Act or otherwise serve the public interest. The Committee did not intend that the court's discretion to award fees under this provision should be restricted to cases in which the party seeking fees was the "prevailing party". In fact, such an amendment was expressly rejected by the Committee, largely on the grounds set forth in *NRDC v. EPA*, 484 F. 2d 1331, 1338 (1st Cir. 1973).

<sup>7</sup> Such fees are already authorized to be awarded in suits brought under section 304 of the Act.

<sup>8</sup> Of course, by using the term "unreasonable," the Committee did not intend to cover every enforcement action in which the defendant prevails. Nor is this amendment intended to permit the court to substitute its judgment for that of the Agency as to the propriety of filing suit. Only if the bringing of the action is arbitrary, capricious, frivolous, harassing, or wholly without basis in fact or law should the courts consider such an action "unreasonable".

In adopting these two provisions concerning fees, the Committee intended to meet the requirement for specific authorization imposed by 28 U.S.C. sec. 2412 and by the Supreme Court's ruling in *Alaska Pipeline Service Co. v. Wilderness Society*, 421 U.S. 240 (1975).

Mr. JAVITS. I understand that the managers of the bill are reluctant to accept amendments to the bill at this point and possibly with appropriate assurances from the committee there would be no need to press my amendment at this time. Since there is a provision in the House bill I would hope that the conferees would give favorable consideration to resolving the issue in a way which will allow EPA to represent itself in most cases. I believe that this will lead to more effective administration of the Clean Air Act and will not do violence to the general administrative law scheme.

Mr. MUSKIE. This is an issue which has not received extensive consideration by the committee and we appreciate the Senator from New York's efforts to resolve the matter short of offering an amendment. The committee is aware of the problem and I myself believe that it would make for more effective administration of the law if EPA had the ability to represent itself in litigation on its regulations. We will look at the House provision and the Senator's amendment very closely.

Mr. JAVITS. I thank my colleague. Based on his assurances of objectivity I feel there is no need to proceed with the amendment, and I shall not call up the amendment. But I ask that it be printed in the Record.

At the appropriate place in the bill add a new section as follows:

SEC. . Section 305 of the Clean Air Act is amended to read as follows:

#### APPEARANCE

SEC. 305. (a) For any enforcement litigation which the Administrator desires to initiate under this Act, the Administrator shall request the Attorney General to appear and represent him. Unless the Attorney General notifies the Administrator that he will appear in such action, within a reasonable time, attorneys appointed by the Administrator shall appear and represent him.

(b) Except as otherwise provided in subsections (a) and (c), in any civil action under this Act, the Administrator shall have exclusive authority to commence or defend, and supervise the litigation of, such action and any appeal of such action in his own name by any attorney of the Environmental Protection Agency designated by him for such purpose, unless the Administrator authorizes the Attorney General to do so. The Administrator shall inform the Attorney General of the exercise of such authority and such exercise shall not preclude the Attorney General from intervening under any other authority of law on behalf of the United States in such action and any appeal of such action.

(c) Subsection (b) shall not apply with respect to representation of the Environmental Protection Agency before the Supreme Court.

Mr. GARY HART. I believe very strongly in the intent of this legislation, particularly section 6 of the bill which will protect air quality values of our national parks and wilderness areas and other Federal lands which at future times may be designated class I. The committee report elaborates on what is meant by air quality values, stating that such values must include the purposes for which such parks and wilderness areas were established and are maintained. Such purposes for national park lands include conserving "the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of some in such manner and by such means as will leave them unimpaired for future generations."

I would like to elaborate on the definition of air quality values. For example, one of the prime assets of our national parks is the magnificent scenery. At certain parks, such as Rock Mountain National Park in my own State of Colorado, a visitor can see more than 100 miles. These magnificent vistas are an integral part of many of our parks and wilderness areas. Haze from stationary sources can impair the views for visitors and alter an otherwise pristine sight. Such an experience lowers the quality of the experience of visiting a park and diminishes the recreational, aesthetic, and restorative value of experiencing these wild expanses. Such occurrences adversely affect air quality values as prominent sights are seen with less clarity and visitors cannot see as far. The visitors' view may also be obscured by the intrusion of plumes which can result in large unattractive streaks or layers of pollution across an otherwise pristine sight.

Haze created by emissions can seriously interfere with visibility in areas where the air quality is quite clear. Odor from air pollution is another potential impact that ought to be avoided through the requirements of this provision.

Another desirable benefit of this policy is to ensure the protection of national parks and wilderness areas from any harmful side effects of low level long-term concentrations of air pollutants of which we may be unable to accurately predict or quantify in a precise fashion.

I offer these comments to give those seeking to implement this legislation some guidance in enumerating the air quality values which the manager has an affirmative duty to protect.

Protecting these values seems to me to be a part of fulfilling the Federal land managers duties as mandated by the establishment by Congress of these parks and wilderness areas.

Mr. McINTYRE. I propose to call up my amendment No. 2129 to S. 3219, the Clean Air Act amendments.

#### AMENDMENT No. 2129

On page 73, line 21, after "SEC. 31," insert "(a)".

On page 74, between lines 10 and 11, insert the following:

"(b) Notwithstanding any other provision of law, the Administrator of the Federal Energy Administration shall not exercise any authority to terminate allocation or price controls on gasoline until at least thirty days after the Administrator of the Environmental Protection Agency has submitted to Congress a study of the effects of the supply of all grades and types of gasoline sold to the public in all areas of the country resulting from all regulations prescribed by the Administrator of the Environmental Protection Agency with respect to the lead content of gasoline."

Mr. McINTYRE. The purpose of this amendment is to forbid the Federal Energy Administration from ending price or allocation controls on gasoline until the Environmental Protection Agency has fully studied the effects of its regulations regarding lead in gasoline on the supply of gasoline available to the public.

The EPA has two sets of regulations regarding lead content in gasoline. One set of regulations requires that cars from the model year 1975 on must use unleaded gasoline to protect their catalytic converters, which help to clean up automobile exhaust emissions.

The other set of regulations is a gradual phasedown of the lead content in gasoline. The purpose of these regulations, which will phase in

between October 1, 1976, and January 1, 1979, is to protect the public from the potential hazards of lead emissions into the atmosphere.

I have proposed this amendment because there are indications that the oil industry has not sufficiently prepared itself to supply enough gasoline to the public as this second set of EPA regulations phases in over the next two years. We have already seen evidence of spot shortages and high prices of unleaded gasoline over the July 4 weekend. And I ask unanimous consent to include in the Record an article from the July 26, 1976 issue of the Oil and Gas Journal.

#### LEAD STEPDOWN THREATENS 1977 U.S. GASOLINE CRUNCH

(By Leo R. Aalund)

All the ingredients for a U.S. gasoline shortage next summer could be at hand if the Environmental Protection Agency sticks to its present lead-phasedown schedule.

Such a rapid and stringent cutback in the amount of octane-boosting lead permitted in U.S. gasoline would reduce industry's total gasoline-making capability. This, coupled with strong growth in unleaded-gasoline consumption as more new cars hit the road plus heavy demand for lower-lead regular and premium, could spell trouble.

Enforcement would drive numerous small refiners out of the gasoline business and cut gasoline output of other small firms and many larger refiners. And it would force diversion into gasoline of much of the high-octane aromatics now going into petrochemicals production.

The lead phase down was originally slated to begin Jan. 1, 1975. The basis of this rule is the EPA's contention that lead use as an octane booster in gasoline poses a health hazard. The health/lead issue is not related to unleaded gasoline, which is required to protect catalytic converters on 1975 and later autos.

Court battles on the health issue prompted EPA to suspend enforcement of the phase-down regulation until earlier this month (OGJ, July 12, p. 20), after the U.S. Supreme Court in effect agreed that EPA has the authority to order lead removal to eliminate a possible threat to health (OGJ, June 21, p. 80).

The EPA now says it will enforce the lead-phasedown schedule and restrict the amount of lead a refiner may use in its total gasoline pool to 1.4 g./gal. during the last quarter of this year. This level is due to drop to 1 g./gal. on Jan. 1, 1977, to 0.8 g./gal. on Jan. 1, 1978, then to 0.5 g./gal. in 1979.

However, EPA hinted in its enforcement announcement that it recognizes that lead phasedown now could cause serious disruption in the industry. The real world existing now is vastly different from when the regulation was promulgated in late 1973.

Bad timing. It is ironic EPA got its final green light for lead phasedown in the summer of 1976. In 1974 and the greater part of 1975, slumping gasoline demand and prospects that America was entering a new era of energy conservation that would include small cars, better fuel economy, and plateauing of gasoline demand dulled the razor edge of the phasedown threat.

But the summer of 1976, almost 3 years after the embargo, is testing some of these assumptions.

Gasoline consumption is running at an all-time peak, well over 7 million b/d. Demand for the first 6 months averaged 6,885,000 b/d—5.1 percent above first-half 1975 and 4.6 percent over the previous record for the period in 1973.

The week ended July 2 racked up the greatest demand ever for a single week at 7,686,000 b/d. And consumption the rest of the year is expected to continue heavy—enough so to pull average demand for the full year to 7,020,000 b/d. That's up to 5.2 percent from 1975 and about the same over the 1973 rate.

Meanwhile, Detroit is selling autos at a clip 40 percent over the 1975 rate. And Americans, who have access to some of the cheapest gasoline in the world, are buying more large and medium-size cars.

Each new car going on the road now requires unleaded gasoline. This already is putting a strain on the nation's octane pool even without the burden of less lead in regular and premium gasoline.

Unleaded gasoline, it's estimated, will account for 20 percent of gasoline sales this year, compared to 13 percent last year. During May unleaded snared 19.4 percent of the market.

Analysts expect unleaded gasoline to increase its market share at the rate of  $6\frac{1}{2}$  percentage points/year. On the other hand, the stunning decline in premium sales, which freed octanes for the unleaded pool, is slowing. From a high of 43 percent in 1970, premium dropped to 19 percent last year. This year it is expected to account for about 16-17 percent. It will now lose, analysts think, about 3 percentage points/year until it reaches about 10 percent of the market. It would stabilize there for several years.

Leaded regular had 68 percent of the market last year and is expected to drop to 64.5 percent this year.

The lead picture. Fig. 1 reveals two significant turning points in the octane/lead picture. In 1970 the national gasoline pool contained about 2.4 g/gal lead. As Detroit introduced low-compression engines requiring lower-octane gasoline, the lead level declined. The dive became steeper in 1974 with the advent of unleaded gasoline.

Late last week, EPA officials were still studying lead-usage reports for the second quarter of this year and expected to have some preliminary analysis this week. The reports were required to be postmarked by July 15 but were still drifting in slowly, officials said.

However, lead content this summer is estimated to be running at the 1.9 g/gal level, an indication that refiners are striving to keep pace with rising demand and sales of unleaded. Unleaded sucks clear octanes from the leaded gasolines, thus requiring more lead in the latter. Lead levels would show a more-pronounced drop should phasedown be enforced.

EPA is well aware increasing the clear octane of the nation's gasoline pool, which would be necessary with lead phasedown, decreases gasoline yields if everything else is held equal.

Therefore, the agency is collecting data to see if, when, and how fast it wants to enforce lead phasedown. There is a good chance the information will show EPA it should go slow on its enforcement schedule or grant numerous exemptions.

To collect the complex information it wants by July 31, EPA is using a carrot-and-stick approach. If a refiner doesn't supply the information, EPA won't consider any request from him for relief from phasedown regulations.

The agency's demand for information has refiners scrambling. Among other things, EPA wants to know a history of lead levels, sales, exchanges, details on reformer operations, octanes, and octane-improving facilities.

The National Petroleum Refiners Association asked EPA Administrator Russell Train to provide an additional 30 days for refiners to complete a second part of the current information gathering program by the agency. EPA in announcing it would enforce the 1.4-g/gal. limit as of Oct. 1 said any exemptions would have to be based on detailed information to be supplied by July 31.

NPRA noted that the official notice asking for the additional information wasn't published officially until July 9, and said the time period is insufficient for many refiners.

EPA indicated, however, it would probably reject the request because refiners would not lose any legal rights by late submission, and the agency says any information would be considered, even if beyond the deadline, as long as it is received before any further decisions on the lead phasedown are made—probably in mid-September.

Once this mass of material is boiled down, it's probable it will show that the phasedown will cut deeply into U.S. gasoline production.

Impact. One refiner's study concludes a lead restriction of 1.4 g/gal. would cut the country's a gasoline "producibility" by 800,000 b/d. This compares to an estimated maximum summertime availability of about 7.7 million b/d. Availability is refinery output, imports, and inventory drawdown.

The 7.7-million-b/d availability figure, which should hold for at least the next two summers, assumes no lead-phasedown restrictions, no change in gasoline quality, and no increase in the use of manganese as an octane improver.

A drop to 1 g/gal. would cut gasoline productibility another 800,000 b/d or a total of 1.6 million b/d, this refiner estimates.

Such an analysis can be significantly modified by a host of variables. Nevertheless the direction is toward decreased gasoline yields.

Figs. 2 and 3 reveal some of the chemistry of gasoline production and its impact on gasoline yields.

Fig. 2 is based on a model of the U.S. refining industry that includes all the processes contributing octanes to gasoline.

This model is more flexible than any single U.S. refiner. Also, without research the curve can't be used to determine yield loss, due to lead phasedown in October or later periods. The reason is the U.S. industry is already up on the curve, and individual refiners are scattered along the curve.

What Fig. 2 does highlight is that yield losses are stiffer as octane increases are made in the upper range. For example, going from 0 to 11 causes a 0.4 percent yield loss while going from 6 to 7 gives a 2.1 percent loss.

Fig. 3 focuses on the catalytic reformer, the most important octane-upgrading unit in a refinery. This typical yield/octane curve shows that modern units (200 psig) have increased the yields of high-octane gasoline components ( $C_5+$ ). However, even the modern units display yield declines as octane or severity is increased. Quality of reformer feed also influences these yields.

And the Journal's most-recent refining survey shows some 32 percent of the country's 3.6 million b/d or reforming capacity is in older units that suffer the greatest yield losses with increased severity.

The refiners. National models and typical relationships, of course, don't reflect any individual refiner's plight.

One manager with a fairly typical refinery in the 100,000-b/d range reports dropping the lead level to 1 g/gal in 1977 would force him to increase the severity of his reformer operation from 89 to about 95 RON, resulting in over a 6 percent loss in reformate yield.

A spokesman for Ashland Oil Inc. says the 1.4 g/gal limit would, in effect, trim 30,000 b/d from its refining capacity and cut its gasoline production by 17,000 b/d or about 10 percent.

A further drop to 1 g/gal would cause another decline in output and remove all toluene and xylenes from petrochemical operations.

The phasedown also would mean more frequent shutdown of Ashland's reforming units which would have to operate at higher severity.

All this, Ashland says, comes atop a situation wherein the company is forced to charge to its refineries steadily more Persian Gulf crude oil, a poor gasoline crude.

The company is urging EPA to delay start of the phasedown until Jan. 1, 1977, and to begin it with a lead reduction to 1.7 g/gal rather than 1.4.

Tenneco Oil Co., which produces some 52,000 b/d of gasoline, is in the midst of a detailed study of the phasedown impact. Its preliminary data indicate it would be stiff. The company's present gasoline-production mix is 60 percent premium and unleaded and 40 percent leaded regular. The stepdown to 1.4 g/gal of lead would reverse the ratio to 40 percent premium and unleaded and 60 percent leaded regular. The further cut to 1 g/gal Jan. 1 would chop its premium and unleaded output to only 20 percent of total gasoline production, with 80 percent leaded regular, the company says. That would amount to a total cut in unleaded and premium output from 41,600 b/d to only 10,400 b/d.

There's nothing the company could do short term to change this ratio, a Tenneco spokesman says, "We're boxed in with an older reforming unit which at maximum efficiency can yield only 93 octane."

The company's only possible option, he says, would be product trading—leaded regular for unleaded or premium. But Tenneco anticipates many other refiners would be doing the same thing. The demand, the spokesman says, almost certainly would be "ferocious."

Long term, he says, Tenneco could build new reforming or  $C_5$ - $C_6$  isomerization facilities to improve its octane position. But Tenneco Oil would have to compete with the other nonoil affiliates of the parent company for the budget. And the big capital investment required with prospects for little or no return would make its chances for approval uncertain.

Several majors contacted by the Journal say they have task forces at work compiling the information EPA wants, but because of the complexity of their operations they are not yet in a position to assess the effect of phasedown.

Gulf Oil says phasedown would cut down on its gasoline availability and that it would be expensive. But the company said it would not affect its ability to meet customer demands.

Small refiners. On the other hand, several small refiners insist phasedown, to them, literally means getting out of the gasoline business.

Frank Wood, chairman of the American Petroleum Refiners Association, whose membership includes 96 refiners with capacity of less than 50,000 b/d, says his group is conducting a survey of its membership to determine its gasoline output. These refiners account for 746,000 b/d of the country's some 15.1 million b/d of refining capacity.

At press time, APRA had replies from 35 of these refiners operating 43 refineries with crude capacity totaling 528,840 b/d. The plants were operating at an average rate of 82 percent of capacity and an average 22 percent of their production was gasoline during the April 1976 survey period. Gasoline production, thus, totaled about 95,000 b/d for this group.

The survey shows a lead limit of 1.5 g/gal (the EPA phasedown order wasn't yet issued when the questionnaires were sent out) would cut gasoline production by these refiners to an average 5.07 percent of runs—or to some 21,900 b/d.

With no lead at all, gasoline production would be cut to 1.9 percent of runs—or to only 8,200 b/d at the April percent-of-capacity rate.

Of the 43 reporting refineries, 18 produced no gasoline at all, 18 produced 25 percent of runs or more, and 7 produced from 0–25 percent of runs.

Five of the 43 refineries have catalytic crackers, 15 of them have cat reformers, and four alkylation units—making up 8.1 percent, 8.5 percent, and 2 percent of crude capacity, respectively.

Only one or two of the 35 reporting firms, Wood says, have firm plans to improve their gasoline-producing capability. A total of eight are studying the possibility.

Generally, these refiners are oriented either toward military jet fuel and fuel oil or to motor gasoline. Those in jet fuel and without reformers often trade naphtha for gasoline components and are active in local markets selling leaded regular and premium.

Wood says lead phasedown would make it difficult to find gasoline components, since octanes would be at a premium. He says phasedown would probably take his company, Pride Refining, out of the gasoline business. Pride makes about 3,000 b/d of gasoline.

But even a small refiner with some reforming capacity would have a tough row to hoe.

One in the Southwest with three refineries and total capacity of 17,500 b/d says lead phasedown will mean a cutback in crude runs at its largest refinery from 9,000 to 7,000 b/d. That's because he would have to increase the severity of his 1,500-b/d reformer.

He is planning on buying another small reformer on which there will be no return on investment.

"It will just keep us in the gasoline market," he says.

The EPA originally exempted refiners with 30,000 b/d or less capacity from the first two steps of lead phasedown. However, those have already passed if the EPA goes back on schedule.

After analyzing the mass of data it gets from the country's refiners, large and small, EPA should be able to assess the effect of phasedown on U.S. gasoline production.

Early indications are that it would be heavy—and would come at a time when gasoline demand in the U.S. is again setting new all-time records.

Mr. JACKSON. Is the Senator's main concern that if FEA price and allocation controls are ended too suddenly and too soon, that there might be shortages and much higher prices, perhaps by December or by next summer, forcing the FEA to reimpose controls?

Mr. McINTYRE. Yes; that is my main concern.

Mr. JACKSON. This issue of the possible shortage of gasoline resulting from refiners being ill-prepared for the EPA lead phasedown has already been brought to the attention of the Senate Interior Committee. It is my intention to request that both the FEA and the EPA submit to the committee reports analyzing the impact of the lead phasedown on gasoline supplies and prices. If, in addition, the President submits a proposal to the Congress to decontrol gasoline under the procedures of the Energy Policy and Conservation Act, the committee will immediately schedule hearings on the issue. Under the

EPCA one House of Congress could disapprove any decontrol proposal. I would expect that the FEA and EPA analyses of the lead phasedown issue would be highly relevant to these hearings.

It would be my view as well that, with respect to the impact of lead phasedown on gasoline supply and price, the burden of proof of the likelihood of shortages, price increases or both ought to be borne by the refinery sector of the oil industry. In any event, I agree with the Senator from New Hampshire that the issue deserves careful study.

Mr. McINTYRE. I understand my colleague from the State of Washington to say that he will consider these issues, and will press for disapproval of any FEA action to decontrol gasoline if a shortage appears likely?

Mr. JACKSON. That is so.

Mr. MORGAN. I have an amendment which would amend section 11 of the Clean Air Act Amendments of 1976. I do not intend to call up that amendment for a vote, and, due to the lack of time, I may not be able to engage in a colloquy on this language with the floor manager and other Senators.

My objective in offering this amendment was to have it serve as a catalyst for discussion centering on section 11 of the amendments. It was never considered by the committee, and I do not mean to say that it is an answer to the problems which arise in section 11 of the committee bill. I do want to see that some record is built on the issue of "nonattainment" so that when the Senate and the House meet in conference the concern expressed by this body and the ideas aired here can add to the discussion of "nonattainment" and help the two Houses to come to a well-developed decision on this matter.

I also offer a paper written by representatives of Exxon Corp. which points up the problems which they find with section 11 of the committee bill, which I ask to have printed in the Record.

#### THE POTENTIAL IMPACT OF SECTION 11 OF S. 3219 (CLEAN AIR ACT AMENDMENTS)

Section 11 of S. 3219 (Sec. 115 of H.R. 10498) deals with economic expansion in geographical areas presently exceeding the national ambient air quality standards. The Clean Air Act, as amended in 1974, prohibits new or expanded industrial facilities in such areas if they would prevent or delay, however slightly, attainment of the standards. Section 11, while ostensibly designed to permit expansion of existing facilities in nonattainment areas under certain conditions, does not solve the problem, since those conditions cannot be met by industries that have already done a good job of pollution control. Furthermore, Section 11 does not permit new industry to move into nonattainment areas.

Enactment of Section 11, as written, would not alter the fact that the present Clean Air Act precludes energy development in much of the United States. No major facility, no matter how well controlled, that would emit a pollutant subject to an unattained air quality standard could be built, unless the owner had facilities in the area that could be cleaned up to more than compensate for the new facility.

Section 11 also would mean no growth in many undeveloped areas. In much of the undeveloped West, recent data show that nature itself (for example, air-borne dust and vegetative hydrocarbons) exceeds the national ambient air quality standards. In such "non-compliance" areas, the same rules apply as in areas polluted by man's activities—that is, no new sources may be built.

If Congress, in its current consideration of Clean Air Act Amendments, fails to remedy this situation, the results could be disastrous. Already industry is being prohibited from expanding in many areas, as the U.S. Environmental Protection Agency implements the no-growth requirement in non-attainment areas. Some specific examples follow:

**Energy Reserves.** Amoco and Gulf have interests in a 5,000 acre oil shale tract in Colorado, called the Rio Blanco Oil Shale Project. The first year of ambient air quality monitoring on the undeveloped tract has revealed that national air quality standards were exceeded in more than 60 instances, most probably because of natural emissions—that is, airborne dust and vegetative hydrocarbon emissions. Under Section 11—which imposes severe restrictions on new construction and modification in areas exceeding the national standards, for whatever reason—the Rio Blanco Project and other oil shale projects in such areas could not go forward.

Phillips also holds uranium leases in the northwestern portion of New Mexico and coal leases in the lignite fields that angle from east central Texas up into Arkansas. Under existing Section 11 language, wherever these energy reserves are in air quality control regions exceeding present ambient air quality standards, no development could take place.

**Pipelining.** Sohio is now planning a trans-U.S. pipeline running from Long Beach, California, to Midland, Texas, from which point oil could be transported to practically anywhere in the Midwest and on the East Coast. Several hundred thousand barrels of new storage capacity would have to be built to sustain the pipeline's estimated throughput of 700,000 barrels per day. Under existing Section 11 language the storage tanks could not be built. Even with best available control technology, the company, having no other facilities in that area, would be unable to show "reasonable further progress toward attainment of the applicable national ambient air quality standard." Without the tanks, of course, the pipeline would not be put into operation.

Up the coast from Long Beach, at Estero, California, Socal had planned to build offshore mooring for VLCC's and onshore storage tanks for the incoming crude oil. These facilities would have handled 300,000 barrels per day, with future expansion to 500,000 barrels per day. Environmental considerations changed the economic projections for these facilities, and the plans were shelved. Under Section 11, these plans, temporarily shelved, would have to be permanently cancelled.

**Refining.** The Hampton Roads Energy Company has been planning a 175,000 barrel per day refinery, with a supporting marine terminal, at Portsmouth, Virginia, for almost three years. It is planned for the refinery to make low-sulfur fuels. During that time, the company secured the approval of all necessary state agencies, including the State Air Pollution Board, Marine Resources Commission, and State Water Board. It also obtained preliminary approvals from EPA. Then on April 19, 1976, a representative of the Regional EPA Office at Philadelphia announced that the proposed refinery would be "environmentally unacceptable," because the surrounding area is out of compliance with the hydrocarbon standards. The refinery now may not be built under present law. It would never be built if Section 11 were to be enacted.

Exxon estimates that to date, hundreds of millions of dollars have been spent to install catalytic cracker feed desulfurizers required to reduce sulfur dioxide emissions from the crackers themselves and to install product desulfurizers for reducing the sulfur content of home heating oils. Had current Section 11 language been in effect—because major refining centers like Houston, Los Angeles, and Northern New Jersey are already exceeding one or another of the national ambient air quality standards—many, perhaps most of these desulfurizers could not have been put into place.

As for the future, EPA is now conducting sulfate studies. If those studies should lead to the decision that it is necessary to desulfurize gasoline, Section 11 would prohibit refiners from installing the needed desulfurization equipment in areas now exceeding hydrocarbon standards, including the nation's major refining centers, mentioned above.

Generally speaking, refining capacity now in existence and now under construction is adequate to accommodate the nation's immediate energy needs. As the demand for energy grows, however, the need for refinery capacity also will grow. Shell, for example, estimates that in the near and middle future, it will be necessary to expand at some 15 of its refineries and petrochemical plants. To the extent that such expansions are prevented from occurring because of Section 11 restrictions, to the same extent a wide array of products ranging from home heating oil to synthetic rubbers will not materialize.

I wish to call this body's particular attention to section 11 of S. 3219. Section 11, dealing with industrial expansion in areas

now exceeding the national ambient air quality standards, is intended to address a serious problem embodied in section 110 of the present Clean Air Act, as amended in 1970 and again in 1974. The present law effectively prohibits new or expanded facilities in nonattainment areas, if emissions from such facilities would prevent or delay, however slightly, attainment of the ambient air quality standards.

There are many such areas. Despite our impressive progress toward the Nation's air quality goals during the last 5 years, we have not been able, everywhere, to comply with all of the deadlines for all of the pollutants established by the 1970 statute. Some time ago, for example, EPA Administrator Train, announced that of 247 air quality control regions, 60 would not meet the statutory deadlines for the particulate standards, 42 for sulfur oxides, and 74 for photochemical oxidants.

When we consider these and the other regulated pollutants, we arrive at an inevitable and alarming conclusion: The present Clean Air Act threatens to put a large percentage of the total land area in the United States off limits to new and expanded industrial facilities. It is my understanding, moreover, that because some of these pollutants originate in nature itself—for example, airborne dust and hydrocarbons from vegetation—many such areas never will attain the national standards. It follows, under present law, that they never will be able to offer sites for major industrial growth.

The committee recognized the need for remedy and attempted to supply it with section 11 of S. 3219. As presently written, however, section 11 would not permit new industry to move into nonattainment areas, nor could most existing plants in such areas expand. No matter how well controlled, a major new or expanded facility that would emit a pollutant subject to an unattained air quality standard could not be built unless the owner had facilities in the area that could be cleaned up to more than compensate for the new facility. Only in this way would he be able to meet the "at no time increase" and "reasonable further progress" requirements of section 11.

I was concerned with this problem during the committee's consideration of the bill and at that time expressed my concern that the language contained in section 11 would penalize a facility that has done a good job, as opposed to a different facility that has not done well. The latter can tighten his controls and expand his plant, the former may not.

Neither the present act nor section 11 of S. 3219, therefore, provides the needed remedy—namely, resolution of the dilemma posed by the legal requirement to achieve this or that pollutant reduction by a date certain on the one hand and the social imperative to provide for reasonable economic growth on the other.

Take the case of a company which wants to locate a major new energy facility of vital importance to the country in or near an urban center which has a high unemployment rate. Assume also that this proposed facility is in an area of the country where the company does not presently have an existing facility. The area now exceeds national ambient air standards and cannot comply with the mandated schedule, due to the major social dislocations involved in meeting the standards, unusual geographic or meteorological conditions which make the meeting of the standards unrealistic, or nature's own contributions exceeding the standards. There are many such areas in the country, and some

of them will never be in a position to reach compliance. Under the Clean Air Act amendments of 1970 and S. 3219, the proposed new facility could not be built in the future.

Take the case of a refinery which wants to construct a major desulfurization unit for the manufacture of low-sulfur fuels in the same area as the first example. Assume that the existing facility already utilizes a high degree of emission control technology and that further reductions in the emission from the existing equipment are not realistic. Both of these assumptions are very plausible. Again, under both the present act and S. 3219, this desulfurization unit could not be built even using the best available control technology.

Take the case of a major deposit of a natural resource which can be developed only in the area where it exists. A few examples are oil, natural gas, and oil shale and coal deposits in the West, many of which lie in areas which will always exceed existing particulate and oxidant standards because of natural dust and vegetative hydrocarbons. It is unclear that these resources could be developed now under the present act or in the future under S. 3219, because of the natural background.

To summarize the situation, under existing law, new facilities cannot be built in areas where any ambient air quality standard is not being attained, except possibly under very limited circumstances. Until the law is changed, the economies of these areas will stagnate. At a time when it is generally recognized that we need more jobs, not less jobs, this is an unbelievable situation.

The principal problem with the existing language of section 11 is that it is limited to situations in which there is already an existing plant which is being modernized or expanded, and even in those situations it is unduly restrictive.

The amendment I am offering today authorizes the State to grant a variance allowing the construction of new industrial plants in areas in which a national ambient air quality standard is being exceeded if:

First. The owner of the proposed new source demonstrates that all of his stationary sources in the State are in compliance or on compliance schedules;

Second. The proposed facility will employ the best available control technology;

Third. The State implementation plan takes into account or is revised to take into account the emissions from the new facility, so as to insure that those emissions will not significantly delay the attainment of, or prevent the maintenance of, any national ambient air quality standards; and

Fourth. The social, economic, or environmental benefits of the new facilities outweigh any benefits of preventing its construction. [See Sec. 172]

This amendment places these important decisions in the hands of State officials where they belong. It requires the use of the best pollution control technology on new emission sources. To insure that new emission sources do not result in unreasonable additional delay in attainment of air quality standards, the amendment provides for making appropriate revisions in the State implementation plan, if the original plan did not adequately allow for anticipated growth. If the plan already takes growth into account or if the new source will not affect portions of the region where violations are occurring, revision of the

plan may be unnecessary. On the other hand, if additional controls on existing sources are needed to accommodate a new source, the State can require such controls and permit the new source. Thus, the amendment eliminates the ceiling on economic growth contained in the present act and gives the States the flexibility to consider the overall social and economic welfare of their people in deciding whether and where to permit growth.

Mr. MUSKIE. Concern has been expressed with the fact that the Clean Air Act does not permit new sources of pollutants to locate in areas where ambient standards for those pollutants are presently exceeded. They understand that the section would provide a narrow exception from that requirement for expansion of existing sources in a region but it does not permit broad new sources to come into such areas.

The committee position is—and the Clean Air Act supports the argument—that so long as a new source will not “prevent attainment or maintenance of standards,” it can be located in a dirty air region. But, if the Administrator or a State determines that a new source will prevent or interfere with attainment or maintenance of ambient standards, he cannot permit it.

The committee loophole was intended to provide some flexibility for growth in dirty air areas especially for those kinds of facilities which had heavy capital investment and which could not move or for which economic expansion at another unrelated site was prohibitively expensive. It carries the added benefit of forcing both best available technology on the sources and assured compliance with applicable emission limits. The alternative was delay and decline of existing urban industrial centers even though there was a willingness to invest in the best available technology and continue to make progress to meet ambient standards—the tests of the bill.

At the same time, the committee recognized that new growth associated with new sources not related to existing facilities could only occur where that new source was able to meet the test of the current law—not to prevent or interfere.

To carve out a loophole broad enough to accommodate the desire to locate new refineries and tank farms in regions where the oxidant standard is violated on a regular basis would be to abandon the health basis for regulation. This would be a back door way to void the idea of health standards by a date certain. And there are no control or compliance benefits because new sources have nothing to offer but more air pollution. It would make available the 10-year extension for communities with transportation control problems—community retrofit problems—to new refineries.

If this amendment were to be adopted—or if the record were to admit to any flexibility beyond section 11 or the current requirement not to prevent or interfere—the basic health protection purpose of the law would be null and void.

Mr. ALLEN. I wish to call the Senate's attention to section 11 of S. 3219 dealing with industrial expansion in areas now exceeding the national ambient air quality standards. The section is intended to address a serious problem embodied in section 110 of the present Clean Air Act as amended in 1970 and 1974. The present law effectively prohibits new or expanded facilities in nonattainment areas, if emissions from such facilities would prevent or delay, however slightly, attainment of the ambient air quality standards.

I ask that my amendment No. 2149 be inserted in the Record as my idea of a provision which will meet the goals which I have set forth in my remarks.

SEC. 11. Section 110 of the Clean Air Act is amended by adding the following new subsection:

"(g) (1) Nothing in section 110(a) shall be construed to provide that an applicable implementation plan must prohibit the construction or modification (within the meaning of section 111(a)(4)) of any new stationary source of any air pollutant in any air quality control region in which a national ambient air quality standard is being exceeded for such pollutant if a variance is issued under paragraph (2).

"(2) A variance for purposes of paragraph (1) may be granted under this subsection for a proposed new stationary source or for a proposed modification of a stationary source by the State (or by the Administrator with the consent of the Governor of the State in which such source is to be located) if, after notice and opportunity for public hearing—

"(A) the owner or operator of the proposed new or modified stationary source demonstrates that—

"(i) all existing major stationary sources owned or operated in the same State (or, in the case of an interstate air quality control region, States) by the person proposing such construction or modification are—

"(I) in compliance with all requirement under this Act, including provisions of applicable implementation plans, or

"(II) in compliance with approved schedules and timetables for compliance under applicable implementation plans, under compliance orders issued under section 113 before enactment of this section, or under compliance date extensions issued under this Act; and

"(ii) the proposed new or modified stationary source will comply with emission limitations requiring use of the best available control technology, as defined by the States in which the proposed source is to be located, which emission limitations shall be at least as stringent as the new source standards of performance which would be applicable to such category of sources under section 111 of this Act, and

"(B) the State (or the Administrator, as the case may be) determines, after such notice and such opportunity for public hearing, that—

"(i) the applicable implementation plan takes into account (or if necessary will be revised to take into account) emissions of any such pollutant from such proposed new source or modification and provides that the emissions from such proposed new source or modification will not result in delay in the attainment of, or prevent the maintenance of, any national ambient air quality standard for such pollutant beyond the date such attainment would have occurred under the applicable implementation plan (as modified by any compliance order issued pursuant to section 113 prior to date of enactment of this section and by any compliance date extension variance, or exemption under this Act): and

"(ii) the social, economic, or environmental benefits of such proposed new source or modification outweigh any benefits of preventing its construction.

"(3) Not later than one year after date of receipt of a complete application (as determined in accordance with regulations of the Administrator) for a variance under paragraph (2), the State (or the Administrator as the case may be) shall act to grant or deny any such application.

"(4) For the purpose of this section, the term 'major stationary source' has the same meaning as provided by section 121(2)(3)." [See Sec. 110(h)(2)(j)]

MR. RANDOLPH. Section 11 was adopted in the committee at my urging. I offered the amendment because I felt it was important to provide some means to allow industrial expansion in areas where ambient air quality standards have not yet been attained. I recognize that section 11 provides only very limited opportunities for growth in these so-called nonattainment areas. It does not cover completely new facilities, only expansions. It may not offer much to the company whose existing facilities have already been cleaned up with the best available technology, or are inherently clean. And the tests of section 11 requiring improvements in emission reductions, and further progress toward attainment of the ambient standards, may be hard to meet in

a region where natural background levels of pollutants contribute significantly to the nonattainment of the ambient standards.

These potential obstacles to growth in nonattainment areas concern me. I am not certain, however, at this time, what the best approach may be to deal with those concerns. I know that the House clean air bill is somewhat more generous than section 11. Therefore, I intend to pursue the problem of industrial growth in nonattainment areas, in the House-Senate conference on this legislation. I believe we will be able to find a solution to the problem of background contributions, and that faced by the company whose existing facilities are clean.

Mr. DOMENICI. The problem with the present legal mechanism for handling the nonattainment issue is that it is based on a prohibition. As noted on page 42 of the Senate report:

The Clean Air Act prohibits the addition of any emissions of an air pollutant in any air quality control region or portion thereof where an ambient air quality standard for that pollutant has not been attained.

It is worth noting that the other prohibition we employed in the act, gas rationing, was an unmitigated political and social disaster. In fact, gas rationing for mobile sources is analogous to the prohibition on new stationary sources in air quality maintenance areas. As with gas rationing, I believe we need another strategy for air quality maintenance areas. I recently wrote Mr. Train expressing my dissatisfaction with the solutions the committee has reached on this issue and requesting his assistance. I ask that a copy of my letter be put in the Record.

I do not pretend to have any magic answers to the problem. I do, however, believe that environmental regulations are most effective and gain wider support when they are framed as constraints rather than prohibitions. A strategy based on constraints allows economic growth as long as it meets certain environmental conditions. In contrast, prohibitions ban growth. Personally, I believe a strategy based on constraints serves as a spur to creativity on the part of industry. Prohibitions are an invitation to disaster.

JULY 20, 1976.

Hon. RUSSELL TRAIN,  
*Administrator, Environmental Protection Agency,*  
*Washington, D.C.*

DEAR RUSS: I am writing to express my concern over what I see as an emerging problem of critical dimensions to the future of the Clean Air Act. This is the question of economic growth in air quality regions that already, or soon will, violate the national ambient air quality standards.

This issue, known as the air quality maintenance issue, is partially treated in section 11 of the present Senate bill, S. 3219. However, the relief offered by S. 3219 is available only to existing facilities under conditions that only a limited portion of American industry can meet. Ironically, these conditions reward industries that have lagged in their pollution control efforts.

Regrettably, I do not consider the present section 11 amendment a sound basis on which to fashion a national policy. It ignores too much of the problem. First, the present amendment ignores the possibility of natural violations of the national standards by either windblown dust or naturally occurring oxidants. This problem also encompasses windblown particulates from unpaved roads, or farm lands which, although technically manmade, are for all practical purposes uncontrollable.

Second, section 11 overlooks the problem caused by the movement of pollution, particularly oxidants, over great areas. This raises the dilemma of a community being classified as a maintenance area because of the influx of pollution from outside its borders.

Third, section 11 fails to address the problem of new sources entering a maintenance area. In addition, section 11 offers no assistance to an existing source that wishes to expand but is already using best available control technology.

What I find especially troubling about the above three objections is that their aggregate effect is to make the maintenance issue far more pervasive issue than that posed by the nondegradation amendments found in the Senate bill. Because of the first two problems, air quality maintenance has become a rural, as well as urban problem. And because of the third objection, the ability of our urban centers to attract desperately needed new industry is placed in doubt. However, while the nondegradation issue has at least undergone several years of intense scrutiny, the maintenance issue has received little attention.

Ideally, the proposed National Air Quality Commission, working in concert with your agency, would be the proper organizational vehicle for addressing this problem. However, I am concerned that waiting for the Commission's report may prove to be a legislative luxury. Accordingly, I would appreciate your views on the following:

- (1) An assessment of the scope of the air quality maintenance problem;
- (2) A statement of existing legislative and administrative tools available to address the problem; and,
- (3) If possible, any additional legislation that would be of assistance.

I recognize that the third request may be an impossible undertaking during this session of Congress. However, I would appreciate any guidance you can offer.

Kindest regards and best wishes.

Very truly yours,

PETE V. DOMENICI,  
*U.S. Senator.*

#### OPACITY

Mr. RANDOLPH. The abatement of air pollution requires the enforcement of appropriate air pollution controls. The type of control requirement selected by air pollution agencies to effect reductions of air pollution should relate to the form and extent of a source's impact on the environment.

This is particularly true for the regulations of the various States dealing with opacity—the visible particulate emissions that traditionally have suggested pollution in the air. This type of requirement is essentially dependent on the subjective judgment of air quality inspectors and variable factors such as the intensity of sunlight and the time of day when such visual measurements are made.

In the early days of efforts to bring industrial pollution under control, opacity tests were adopted as one of the first means of detecting the presence of emissions and determining when they have been eliminated. This procedure was adopted prior to the development of the more sophisticated detection and monitoring systems which are now available and should be applied.

The Ringelmann chart originated in 1890 as a means to regulate black smoke plumes. More than a half century later in 1947 the Los Angeles Air Pollution Control District adopted the equivalent opacity concept. This enforcement tool extended the Ringelmann chart to visible plumes of any color which obscure the vision of an observer to the same degree as black smoke.

Following recognition of this concept in 1948 by the California Health and Safety Code, equivalent opacity tests for visible emissions were adopted by major urban areas throughout our Nation. While the legality of this concept has received frequent challenge, the legality of this surveillance technique has been upheld in the courts.

Opacity regulations, while useful for the surveillance of the aesthetic effects of stationary source emissions, do not serve as an ef-

fective surveillance tool to determine the impact of a facility on ambient concentrations of air pollutants.

Despite the usefulness of such regulations for the surveillance of large numbers of non-major emitting facilities, three major technical questions have arisen concerning the validity of "equivalent opacity" regulations, especially for major emitting sources. These limitations are—

First, the visibility of a plume, and so-called "fugitive" emissions, is largely determined by the size of particulate emissions, rather than the quantity of pollutants. This is of particular concern since the opacity of emissions can be reduced by simple dilution, although the amount of pollution remains the same.

Second, for the purposes of enforcement, questions arise concerning the reproducibility of "opacity" readings of emission plumes and, in particular, "fugitive" emissions. This surveillance technique is perhaps the least precise, yet we now rely on it as the basis for regulating the air pollution impact of major emitting sources.

Third, serious questions surround the means for complying with such regulations, since opacity of an emission also varies with the position of the observer relative to the sun, atmospheric lighting, and background.

The environmental impact of a source is determined by the amount of pollutants discharged into the atmosphere. For this reason, "process-weight" standards were developed as a replacement for opacity regulations and Ringelmann standards for particulate emissions. As such "process-weight" standards control the principle impact of major emitting sources on environmental quality.

I ask that an article appearing in the June, 1976 issue of *Environmental Science and Technology* be printed in the Record.

#### FACTORS INFLUENCING PLUME OPACITY

(Previously unrecognized uncontrollable variables such as the angle of the sun, the time of day and the geographic location of the power plant greatly influence smoke plume opacity.)

(By Alexander Weir, Jr., Dale G. Jones, and Lawrence T. Papay, Southern California Edison Co., and Seymour Calvert and Shiu Chow Yung, Air Pollution Technology, Inc.)

Numerous experiments on the removal of particulate matter with electrostatic precipitators and wet scrubbers have been conducted at the 1580 MW coal-fired Mohave Generating Station at South Point, Nev. It was established that opacity is not a function of particulate grain loading alone, but is influenced by a number of other independent variables, some of which are beyond the control of the operator of the stationary source. Thus, mass emissions cannot be determined by opacity measurements alone.

The experimental data, including plume opacity observations by trained smoke observers, were obtained in conjunction with 11-ft and 32.5-ft diameter stacks and fly ash particles of similar shape having 0.95 and  $2.5\mu$  mean diameters. Mass emissions of particulate matter ranged from 0.004–0.40 gr/scf. The data indicate that it is possible for opacity to vary from 14–87% with a 32.5-ft diameter stack at a constant mean particle diameter of  $2.5\mu$  and a constant mass emission rate of 0.05 gr/scf.

This paper presents the quantitative effect of a number of independent variables on opacity. It also shows that the use of opacity measurements by regulatory agencies to determine the degree of particulate emissions is contrary to the laws of nature, regardless of the laws of man.

## VARIABLES AFFECTING OPACITY

There are a number of variables that affect opacity other than the mass emissions of particulate matter. These variables can be divided into two categories: Those variables that are a function of the control equipment and can be "controlled" by the operator or the designer; and those variables beyond the control of the operator (see box).

Control equipment could be installed to influence plume opacity as a result of controllable variables, but opacity standards would still reflect the influence of five other "controllable" variables in addition to mass emissions.

Light-scattering theory (see Reference 1 Additional reading) predicts opacity values within a reasonable degree of accuracy over a range of mass emissions (from 0.004–0.4 gr/scf) and large variations in mean particle sizes compared with the observations of trained observers.

In this paper the theory is used to quantitatively determine the effects of changes in a single parameter on opacity, while all other factors are held constant. Several arbitrarily selected conditions were used as a basis for conducting this parametric study. In the figures that follow, the opacity that corresponds to this nominal set of conditions is indicated as a black dot on a curve generated by variations in a single parameter. By using the Halow-Zeek equation and making certain assumptions, the opacity corresponding to the arbitrarily selected conditions (see Table 2 for "black dot" values) is 85%.

## CONTROLLABLE VARIABLES

Mass concentration of particulate emissions was the first parameter considered. A functional opacity-mass relationship for an asphalt concrete plant was recently reported by the EPA in the *Federal Register*. These EPA data have been replotted in Figure 1, which also shows the predicted opacity-mass relationship beginning with the "black dot" conditions typically at the Mohave Generating Station. Note that for the coal-fired power plant, as the grain loading approaches a large value, the opacity asymptotically approaches 100%. Conversely, as the grain loading approaches zero, the opacity asymptotically approaches zero. In coal-fired power plants, opacity is thus not a simple linear function of mass emissions as EPA published for asphalt-concrete plants.

Figure 1 indicates that at a grain loading of 0.05 gr/scf, the EPA data suggest an opacity of 6%, while at the same grain loading the opacity at the coal-fired power plant would be 85%, as indicated by the black dot. This large difference is accounted for by the influence of variables other than the concentration of mass emissions.

One important independent variable is the diameter of the stack, which fixes the path length that light traverses during penetration of a smoke plume. The larger the diameter, the greater the path length over which light is scattered by smoke particles, and the greater the apparent plume opacity.

The size of the particulate matter in the smoke plume is another variable that has a pronounced effect on opacity. If 50% of the particles by weight are larger than a given size (and the remaining 50% by weight smaller than a given size), then the characteristic size is called the mean particle size. At a given grain loading, the smaller the mean particle size, the greater the number of particles in a given volume of gas and the greater the degree of light scattering and resultant opacity.

Deviation from the mean size is another important variable. Particle size distribution can be measured with a sampling device called a cascade impactor that separates the particles into different sizes. By weighing the amount of particles collected for each size range the weight fraction of particles can be determined as a function of particle size. Most particle size distributions for coal-fired power plants can be plotted as a straight line on log probability paper, corresponding to a gaussian distribution of the ratio of particle diameter to the mean particle diameter. Thus, the geometric standard deviation from the mean particle size can be defined as the ratio of the particle size at 84 wt % to the mean size, or also the ratio of the mean size to the particle size at 16 wt %. If all the particles are the same size, the geometric standard deviation is one, but increases as more particles are found in size categories different from the mean size.

For mean particle diameters of  $2.5\mu$  and larger, the smoke plume opacity is minimum at a geometric standard deviation of one, and increases as the devia-

tion increases. This is because of a larger percentage of small particles falls between  $0.2\text{--}2.0\mu$  (the most effective size range for light scattering). For a mean particle diameter of about one micron, the converse is true. The opacity is a maximum at a geometric standard deviation of one since all the particles are within the optimum light-scattering size range. As the deviation increases, an increasing fraction of particles fall outside the optimum light-scattering size range, and the opacity decreases. Therefore, for the small particles ( $0.95\mu$ ) opacity *decreases* as the deviation from the mean particle size is *increased*, while for large particles ( $2.6\mu$ ) the converse is true.

Stack gas temperature is also an important factor. One convenient measure for mass emissions of particulate matter, which is reported in the literature and frequently used for comparisons between different coal-fired power plants, is grain loading, or grains of particulate matter per standard cubic foot. If such a measure is used, the variations in the temperature of the stack gas will influence the relationship between standard cubic feet and actual cubic feet of stack gas. The higher the stack gas temperature, the higher the ratio of actual to standard cubic feet, and the lower the particle concentration per cubic foot, thus decreasing the opacity.

#### UNCONTROLLABLE VARIABLES

One of the important variables that is determined by the characteristics of the fuel and not controllable by a power plant operator is the density of the particles emitted. The less dense the particulate matter, the greater the number of particles at a specified grain loading and the greater the opacity. Variations in particle density between  $2.0\text{--}4.0\text{ G/cm}^3$  can occur for coal-fired power plants because of the different chemical nature of the ash, which varies with the geologic location where the coal is mined. It is important to point out that standard techniques of measuring particle density by displacement may not be valid for many types of fly ash particles because of surface inclusions and/or formation of hollow ash spheroids during the combustion of coal. Variations in opacity from 60–90%, owing to normal variations in particle density alone, would not be considered unusual.

Still another uncontrollable particle property that influences opacity at a given mass emission rate is the particle index of refraction. Typical power plant fly ash particles have an index of refraction of about 1.5. Mohave fly ash particles have an index of refraction of 1.6 (measured by microscopic examination with selected immersion oils). A range in refractive index from 1.4–1.6 corresponds to a difference in opacity from 77–95%.

The color of the plume and the color contrast ratio between the plume and the sky is another uncontrollable variable related to the type of fuel burned. Even if all factors such as mass emissions and particle size are the same, the opacity of a "black" plume against an overcast background will be different from the opacity of a "white" plume against an overcast background. If the overcast is white, the "black" plume will have a higher apparent opacity than the "white" plume. If the overcast is black or dark gray, the opposite situation will prevail.

TABLE 1.—EFFECTS OF GEOGRAPHIC LOCATION AND CALENDAR DATE ON OPACITY

	Kauna Point, Hawaii	Key West, Fla.	Grantley Harbor, Alaska
Latitude	19°2'N	24°33'N	65°16'N
Angle of Sun at time of maximum opacity:			
June 21	85.5°	89.0°	48.0°
December 21	47.5°	42.0°	1.0°
Percent opacity under "black dot"; conditions at maximum opacity:			
June 21	86.4	86.8	68.5
December 21	67.5	64.5	14.5

Note: The opacity at sunrise or sunset is 14 percent at all 3 locations.

Plume color is caused by the nature of the particulate matter in the plume. Silica or glass-like particles produce "white" plumes while carbon or light-absorbing particles produce "black" plumes. Because of combustion temperatures achieved in coal-fired power plant boilers, the particles in the plume are generally glass-like in nature, and the plume is generally "white" in color.

Data have been obtained for a white plume viewed against a blue sky background. If the sky were a white overcast color, a white plume would tend to disappear and could only be seen by a brightness difference between the plume and the overcast. There are no data upon which to base a prediction of the opacity of a white plume on an overcast day. Similarly, a white plume on a clear day viewed against a dark background (such as a forest-covered mountain) will produce a different opacity than the same white plume viewed against a blue sky. The color of the background thus has a significant effect on the opacity of a white plume.

Seasonal variations in ambient airborne particulate matter (caused by wind or other factors) tend to change the color of the sky. Daily variations in sky color resulting from sunrise/sunset effects, photochemical smog or changes in weather conditions all influence the opacity of a white plume without any change in the mass emissions of the plume itself. Such factors are difficult to quantify since no data for white plumes are available for correlating Ringelmann number to color contrast ratio as a function of background color.

Another uncontrollable factor related to the type of fuel burned is the water vapor content of the flue gas. While it is generally recognized that water is one of the products of combustion emitted by oil-fired powerplants, it is not always recognized that large quantities of water also result from the combustion of coal. Specifically, the combustion of a coal containing 10% ash would result in over five times (by weight) as much water as ash being formed. If a wet scrubber were used to remove the ash, additional water would be introduced in the gas so that the gas would be saturated with water vapor at 120–130° F. leaving the scrubber. While not adding water, an electrostatic precipitator will not remove any water vapor from the gas.

Ambient temperature and humidity conditions can result in the condensation of some of this water vapor and there are no presently available scientific methods with which an observer can distinguish between the degree of opacity caused by the presence of the condensed water vapor and the opacity caused by the presence of fly ash. This factor is interrelated with the variables of wind direction, velocity, and turbulence and no attempt has been made to quantify it in this report.

#### VARIABLES INFLUENCING PLUME OPACITY

##### *Controllable factors*

Mass emission of particulate matter.

Mean particle size.

Deviation from the mean size.

Stack diameter.

Stack gas temperature.

Stack velocity and other factors influencing plume dispersion.

##### *Uncontrollable factors*

(Related to type of fuel burned or process involved) :

Particle density.

Particle index of refraction.

Water vapor.

"Color" of the plume.

(Related to human observer, ambient weather conditions and movement of earth about the sun) :

Wind speed.

Wind direction.

Wind turbulence.

Ambient air temperature and humidity.

"Color" of the sky.

Distance of observer from stack.

Non-level terrain.

Observer offset angle.

Time of day.

Day of year.

Longitude of stack.

Latitude of stack.

"EPA allowable" human error.

Sun angle.

Unlike previously discussed variables that were quantitatively related to opacity, variables such as stack and wind velocity are more difficult to quantify. Although it is not difficult to measure either stack or wind velocity or wind direction, plume opacity is measured by a human observer, and the appearance of the plume in the atmosphere is subject to atmosphere conditions such as turbulence and velocity. Haythorne and Rankin, describing the effects of these variables, said: "The velocity of the exhaust gas and the external wind conditions also will have obvious effects. In a still atmosphere the particulates may build up increasing opacity. In a high wind, particles may be dispersed so that there may be no opacity at all even though the same volume of particulates is emitted." It is also obvious that the wind direction will have an influence on the opacity with observations parallel with the flow of the plume giving higher values than observations made perpendicular to the flow. This "path length effect" is similar to the effect of stack diameter presented previously.

Because of the many combinations of stack velocity, wind velocity, wind direction, and atmospheric turbulence that exist, no attempt has been made to quantify these interrelated variables.

#### THE POSITION OF THE SUN

An important category of uncontrollable factors that influences plume opacity is the position of the sun and the observer with respect to the plume.

The degree of plume opacity seen by an observer depends critically on the scattering angle through which incident light is reflected and refracted the particles in the smoke plume. This "scattering angle" and other geometric relationships are presented in Figure 2. The maximum opacity would be seen when looking at the sun through the plume and the minimum opacity would be seen when the plume is observed with the sun directly behind the observer. The closer to the stack that the observer stands, the more he must tilt his head upward toward the sky and the greater the opacity (because of the decreased light-scattering angle). A remote observation, on the other hand, gives a low reading and is another reason why an opacity measurement is not a reliable indicator of mass emissions.

Another variable affecting plume opacity is non-level terrain. Occasionally, the sun is in such a position relative to the stack that power plant equipment obscures a view of the plume at a distance of two stack heights from the base of the stack. Alternatively, coal-fired power plants are sometimes located near the edge of a cliff or near elevated terrain. In these cases, an observer must usually make an observation at a location elevated or depressed with respect to the base of the stack. This influence on the light-scattering angle has been calculated for an observer at two stack heights from the base of the stack.

The variation in opacity with changes in elevation of the observer are more pronounced at low sun angles in the winter than at high sun angles in the summer. Also, the opacity increases as the observer position is depressed with respect to the base of the stack. Depending on sun angle, aircraft observations would normally indicate a lower opacity than would be seen on the ground. The effects of distance from the stack would be a severe problem, however, in making airborne observations.

If opacity changes when an observer moves closer to the stack at a fixed sun angle, then the opacity obviously must also change when the sun angle changes as the sun moves across the sky relative to a fixed observed position. If all opacity readings are made with the sun directly behind an observer who is two stack heights from the stack, then on June 21st at latitude  $35^\circ$  the sun angle varies between  $0^\circ$  at sunrise or sunset and  $79^\circ$  at the time of maximum opacity. The opacity correspondingly varies between 18% at sunrise or sunset and 85% at the maximum sun angle when all other variables are held constant.

This sun angle effect is illustrated in greater detail in Figure 3, where the variation in opacity, as seen by a perfect observer, is plotted as a function of the time of day. Figure 3 is computed from data presented in the Nautical Almanac and Sight Reduction Tables for Air Navigation to obtain the angle of the sun as a function of the time of day. Knowledge of the latitude, longitude, and time zone in which the power plant is located was also required to obtain the sun angle data. Figure 3 is plotted for the location of the Mohave Generating Station at South Point, Nev.

Since a perfect observer always has the sun directly behind him, he would thus begin the day east of the stack and traverse a circular path at two stack heights from the stack before ending his day west of the stack. Note that this assumes no

obstructions within the circular path around the stack, which probably never occurs at an actual power plant.

If the perfect observer returned to the Mohave site every day of the year, and only made an observation at the time of maximum opacity (the highest sun angle), and if all other variables were held constant for the entire year, the records of the perfect observer would be such that the opacity would vary between 54% on December 21st and 85% on June 21st. Naturally, the daily variations in opacity between sunrise and sunset would occur throughout the year, with the opacity at sunrise/sunset being 14%. The wintertime daily variation in opacity would be less than the summertime daily variation.

Obstructions between the observer and the stack (for example, the power plant boilers) might require that observations be made when the sun is not directly behind the observer (see Figure 2). By using solid geometry to calculate the scattering angle when the sun angle and observer offset angles are known, the effects of making an observation when the sun is not directly behind the observer can be calculated.

The lower the sun angle, the more pronounced the effects of observer offset angle. If an observer looks at the smoke plume when he is in the wrong position with respect to the stack and the sun, the impression received would always indicate an opacity that is greater than the correct value. This is especially pronounced when the sun angle is low and is more likely to occur in the winter than in the summer.

It was previously indicated that observations should be made with the wind at right angles to the direction of observation, since the EPA has established that the observation point should be "perpendicular to the plume." However, it also should be noted that this set of circumstances—wind at right angles, sun at observer's back—will only occur under certain specific conditions.

A smoke inspector who wished to make visual measurements when the opacity of the plume was at its maximum value would choose the time when the angle of the sun was at its maximum value for that day. This time occurs when the sun crosses the meridian of longitude of the observer and is referred to as "Local Apparent Noon" by navigators and astronomers. However, the time of "Local Apparent Noon" seldom coincides with twelve o'clock on the observer's watch. For an observer who is located in the exact center of the time zone, this coincidence only occurs four times a year (on April 15, June 15, September 1, and Christmas Day). On the other 361 days of the year, maximum opacity occurs either before or after twelve noon "Local Standard Time" on the observer's watch.

This irregular variation of the time of occurrence of maximum opacity throughout the year at any given location is caused by differences in the speed of rotation of the earth around the sun, tidal action and other factors. However, the time of maximum opacity occurrence can be calculated for any given day by use of information presented in the Nautical Almanac and knowledge of the local longitude.

#### THE EFFECTS OF LATITUDE

The angle of the sun at the time of maximum opacity is a function of the latitude of the power plant or other source of smoke plume, with greater angles (and greater opacity) occurring at the lower latitudes.

If a power plant is located at different areas within the continental U.S.—all other factors remaining constant—the opacity values for a power plant in the south will always be higher than those seen by the same observer under identical conditions and at an identical power plant in the north. This effect is the result of higher sun angles in the southern latitudes. If national opacity standards were applicable, a power plant in Alaska would obviously have less difficulty meeting the regulations than an identical power plant in Florida.

Figure 4 indicates quite clearly that visual opacity is not an indication of the amount of pollutants being emitted from a stationary source. With all other variables being constant (grain loading, particle size and density, and stack diameter) opacity can vary from 14–87% depending on the geographic location and time of day. If power plants located in Hawaii and Alaska are considered, these effects are even greater.

Table I presents the opacities that would exist if power plants were located at Kauna Point, Hawaii, Key West, Fla.; and Grantley Harbor, Alaska. The opacity at the time of maximum opacity on June 21st in Alaska is almost the same as the opacity on December 21st in Hawaii (68.5% vs. 67.5%). However, the opacity in Hawaii increases to a maximum of 86.4% in the summer, while

in Alaska the opacity decreases to 14.5% in the winter. The winter opacity in Alaska, even the maximum daily opacity, is just slightly greater (14.5% to 14.0%) than the opacity at sunrise or sunset.

The opacity in summer at Key West would be slightly greater (86.8-86.4%) than in Hawaii even though the latitude is greater. This is because the maximum sun angle in summertime occurs when the latitude is equal to the declination of the sun (23° 26.5'N in 1975). The latitude of Key West (24° 33'N) is closer to this value than the latitude of Kauna Point (19° 02'N).

TABLE 2.—RELATIVE EFFECTS OF VARIABLES ON OPACITY

Independent variable	Black dot value	Typical range of variation	Resultant change in opacity with all other variables held constant (percent)
Particulate grain loading	0.05 gr/scf	0.01-0.20 gr/scf	25-98
Stack diameter	32.5 ft	10-35 ft	37-87
Mean Particle size	2.6 $\mu$	0.9-10 $\mu$	96-34
Deviation from the mean size	3.0	1.5-5.0	70-80
Particle index of refraction	1.5	1.4-1.6	77-95
Particle density	2.2 g/cc	1.5-5.0 g/cc	93-51
Stack gas temperature	270° F	130°-350° F	91-82
Stack velocity	90 ft/s	70-130 ft/s	
Water vapor content of stack gas	10 percent	6-14 percent	
Color of the plume	White	White to black	
Wind speed	Zero	Zero to 70 mph	
Wind direction	Perpendicular to observation direction	$\pm 180^\circ$	
Wind turbulence	Zero	Zero to $\pm 30$ percent	
Ambient air temperature and humidity	70° F, 15 percent R.H.	-10° F to 130° F, 0-100 percent R.H.	
Color of the sky	Blue	Blue to overcast	
Distance of observer from stack	2 Hs	0.5-50 Hs	92-74
Effect of nonlevel terrain	Level	$\pm 20$ percent Hs	84-86
Sun angle	79°	0-90°	18-87
Time of day	11:30 a.m. (PST)	4 a.m. to 7 p.m.	18-85
Day of year	June 21 at maximum sun angle	Jan. 1 to Dec. 1 at maximum sun angle	55-85
Geographic location—longitude	114° W, Long. time of max. sun angle	$\pm 15^\circ$ of lat. time of maximum sun angle	83-85
Observer offset angle	0°	0-60°	85-88
Geographic location—latitude	35° N. Lat. at max. sun angle	25° N. to 48 percent N. Lat. max. sun angle	79-88
Allowable human error	Zero	Zero to $\pm 15$ percent opacity	70-100

## SUMMING UP

The prediction of plume opacity by using light-scattering theory and measurements in the stack gas at Mohave were in agreement with the observations made by trained observers. A parametric study of the effects of independent variables on plume opacity by using the same light-scattering theory has shown that plume opacity can vary from 14-87% depending only on the geographic location of the source and the time of day, with all other factors such as particulate matter emissions remaining the same. This implies that the EPA New Source Performance Standard for plume opacity (20%) is not consistent with the particulate matter emissions standard (0.1 lb/10<sup>6</sup> Btu) for all power plant locations or times of day and days of the year.

The relative effects of the 24 variables are tabulated in Table 2. As can be seen, there is an extremely wide variation in possible values of opacity, even when the mass emission of particulate matter remains unchanged. It is concluded that opacity measurements are not indicative of the mass emissions of particulate matter, and that mass emissions cannot be accurately determined from opacity observations. The use of an opacity standard to enforce a mass emission limitation is therefore difficult to justify on a technical basis.

## ADDITIONAL READING

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Mr. RANDOLPH. What is at issue here is a matter of priorities. A principle feature of the clean air amendments is the responsibility it gives to States to develop and enforce air pollution control programs. This is a proper approach, one that was carefully developed by the committee during its deliberations on this legislation.

The problem with which we are faced today stems from the fact that visible emissions, which are a symptom of air pollution, are assumed to represent noncompliance. In some instances, EPA enforcement occurs where the State believes that such enforcement is not desirable. Certainly, if the States are to have basic responsibility for air pollution control, the Federal Government should not take enforcement based on opacity when more effective means are available. The result of such actions by the EPA creates conflict between State and Federal agencies. It also inhibits proper functioning of the program and creates great uncertainty for the industries which are being regulated.

There is at least one instance in which this situation is preventing the completion of a major pollution control program at a large industrial source. The operator of the plant caught between conflicting Federal and State requirements. It thus is unable to proceed with an abatement program involving the expenditure of several million dollars.

An example of this conflict is the EPA application of opacity requirements to the infrequent puffs of particulates from such process activities as coal handling, roof monitors, monetary emissions during raw material charging or tapping metallurgical furnaces, foundries and smelters. Such emissions often occur intermittently for only a few minutes out of any 24-hour day, and have little, if any, effect on ambient air quality.

The enforcement of opacity regulations against such sources causes greatest difficulty to the operators of coke plants, primarily by the steel industry. Coke is a vital ingredient in the manufacture of steel and coke ovens are very difficult to control to the extent that visible emissions are totally eliminated. Such emissions may occur even though a facility is not contributing to any deterioration in air quality and all standards other than opacity are being met.

Mr. MUSKIE. There are many reasons to oppose efforts to remove the use of opacity tests and tests of visible emissions from Federal enforcement. A number are of such significance as to require the special attentions of this body.

First. If the Environment Protection Agency is barred from requiring control of pollution emissions on the basis of a visibility test, then EPA would be barred from enforcing emission controls for

some of the Nation's most significant polluters. Pollution sources and pollution control agencies have relied on visible emissions as a basis for determining the proper functioning of combustion units and pollution control equipment since the beginning of the effort to control air pollution. Today, an essential element of control strategy is television monitors on stacks so that pollution control engineers can judge, on the basis of visible emissions alone, whether or not their equipment is performing properly. Does the Senate want to deprive the Environmental Protection Agency from using the same tools that are available to the pollution source as a means of determining whether or not emission control equipment is functioning properly or at all? No.

Some sources of pollution are controlled through operating procedures rather than pollution control equipment. The test of effectiveness of those operating procedures is visible emissions. Plant operators make the judgment on that basis and so do pollution control officials. Again, should EPA be denied the ability to enforce against inadequate operating procedures where those procedures are the control requirement? No.

Second. The State implementation plans which EPA has approved establish emission limitations and enforcement techniques. In many cases, for a variety of reasons, emission limitations are articulated in the form of opacity regulations. EPA is authorized to enforce emission limitations in State implementation plans whether established in precise numbers or in terms of opacity. Most States have relied on the opacity limits in the absence of a fully evolved, precise ability to limit, by actual numbers, the quantity and quality of plan emissions. It would be improper if EPA were barred from enforcing that basic element of State implementation plans. EPA would then be required to void all current State implementation plans based on opacity limitations and be required to either promulgate precise numerical emission limitations for each plan or require the State to carry out that function. This would set back the effort to control air pollution at least 5 years. It would be a needless and extremely costly Government expense. It would cast doubt on both the wisdom and the effectiveness of Federal law.

Third. The alternative to enforcing emission controls on the basis of opacity is, as I have indicated, to establish precise numerical limits. This would be a difficult and time-consuming process in most cases. But more important, as relates to coke batteries, various other elements of steel operations, and other open industrial processes, it would hardly be relevant. And, in virtually all cases, it would require the installation of stack and nonstack emissions monitoring equipment, the cost of which would be immense, and, in some cases, prohibitive. We know for example that most in-stack monitoring equipment which measures, on a constant basis, the precise emissions from a facility must be replaced frequently because of deterioration. We know monitoring the precise emissions from a coke battery would probably either require the full enclosure of that coke battery and the release of the emissions through a single stack of precisely monitoring each of the doors and the charging areas of each coke battery, either of which would be prohibitively expensive. It is clear that the Senate does not want to remove a useful and cost-effective means of pollution control and sub-

stitute in its stead a prohibitively expensive, barely feasible control and monitoring approach.

Fourth, Visible emissions enforcement is the only immediately available technique for enforcing controls on emissions from those sources of pollution which do not release their pollutants through stacks. I have mentioned coke batteries. There are numerous industrial activities, including windblown dust from coal and ore piles, and fugitive emissions from mining operations or blast furnace gases from steel-making operations which not only do not lend themselves to easy collection and treatment, but also result in significant exposure to workers who breathe the air on the grounds of the plant. The ability of Federal pollution control officers to enforce the visible emissions is essential to protecting the health of these workers. This is one of many areas where air pollution and occupational health efforts meet. An essential element of that protection of the health of workers from ambient air pollution exposure is the capability to enforce on the basis of visible emissions.

A number of arguments have been raised against the validity of these enforcement techniques.

#### DISCUSSION OF ARGUMENTS

1. Opacity regulations are not an effective tool in determining the impact of a facility on ambient air.

*Rebuttal:* These regulations are in many ways the *most* effective tool. They are quick and easy to use—an essential element in air pollution enforcement. Moreover, for many of the sources Senator Randolph admits he is interested in protecting (particularly coke plants) these are the only techniques available to control emissions.

2. "Process weight" standards should be used instead of opacity.

*Rebuttal:* At a coke battery, the weight of the coke going into the process is known, but it is not possible to "weigh" the fugitive emissions that come from the coke battery process.

3. Visibility is determined by the size of the particulate, not the quantity, and therefore doesn't relate to air quality.

*Rebuttal:* This is not correct. There is adequate, though not perfect correspondence between opacity readings and the quantity of pollutants emitted. In addition, this argument calls for using additional techniques, not throwing out the leading technique now being used.

4. Opacity readings are not reproducible.

*Rebuttal:* The question again is acceptable reproducibility, not total reproducibility. The courts have determined that opacity readings are adequately reproducible. "Process weight" requirements should be used where they can be applied, but that does not argue for removing additional control techniques such as opacity readings. In many cases, they are the only technique available.

5. Opacity readings are vulnerable to the positioning of the observer relative to the sun and other atmospheric lighting.

*Rebuttal:* Observers are trained to take readings with consistent positioning relative to the sun. Simple training on the use of this technique is part of all air pollution control officials' training.

6. EPA is enforcing these requirements where air quality is not at stake.

*Rebuttal:* This is not true. The biggest conflicts regarding this have occurred at steel plants—in regions where air quality is two or three times *worse* than the existing primary standards. In addition, this argument misunderstands the fact that the Clean Air Act is not based on ambient air quality enforcement. It is based on the enforcement of specific emission limitations. If this argument is adopted, then it begins to erode the whole concept of enforcing emission limitations rather than ambient air quality.

7. States have complained about EPA creating conflicts in enforcement.

*Rebuttal:* This is true in some areas, but not true on the issues raised in this amendment. States have not complained about the enforcement of visible emissions and opacity. The States were the ones that put opacity readings and visible

emission requirements in State plans in the beginning. These were not EPA requirements.

Mr. RANDOLPH. I have an amendment which would limit the power of the Environmental Protection Administrator to enforce State emission limits which are defined in terms of "opacity" or "visible emissions." Under my amendment the Administrator could not act unless he received a specific request from a State or local air pollution control agency. I am concerned that, today, with all of our advances in air pollution control and monitoring technology there is still an excessive reliance on the human eye as a basic measure of violation of law. This seem to be an unusually subjective method of determining compliance or noncompliance especially when the statute will specify costly civil and criminal penalties for failure to comply with these limits.

Mr. MUSKIE. I agree with the Senator and I understand his concern. We have set in motion a sophisticated law with sophisticated penalties. In many cases highly innovative control techniques will be used and the most modern monitoring methods will be used. But we are also in a transition period. Some manufacturing techniques are as obsolete as the measurement methods to which the Senator refers. Some manufacturing techniques do not lend themselves to stack type emission controls. Their emissions must be limited by operating techniques and improved processes. These kinds of manufacturing operations may only be subject to subjective enforcement techniques such as "opacity" or visible emission judgments.

Mr. RANDOLPH. Would the Senator agree that there should be an effort to move away from these judgmental enforcement techniques whenever possible as quickly as possible?

Mr. MUSKIE. I would agree that we ought to have both stack gas controls and stack gas monitoring. We have modern technology and we ought to be applying it. Where it is appropriate to the source the States ought to be revising implementation plans to replace "opacity" and "visible emission" tests with continuous monitoring requirements. I would also suggest that enforcement based on such tests should be disallowed as soon as the source has installed effective continuous monitoring equipment.

Mr. RANDOLPH. It would be useful to ask Administrator Train to review State plans to determine whether or not these kinds of tests can be replaced with more modern techniques.

Mr. MUSKIE. I would join in that request. I think we should also have the Administrator determine what kinds of sources do and do not lend themselves to continuous monitoring and thus more sophisticated enforcement techniques. Perhaps as a result of such an inquiry we could lay the basis for either future administrative or legislative action.

Mr. RANDOLPH. Hopefully with this kind of review we can determine the fairness and appropriateness of current enforcement techniques and assess the cost effectiveness of alternative methods to achieve the same result—that is air quality which protects the public health and welfare.

Mr. DOMENICI. I would like to offer several tangential remarks to an issue that arose earlier. This is the impact of the nondegradation amendments on the copper industry.

In the opening days of debate on the Senate floor on the Clear Air Act, my colleague from Nevada, Mr. Cannon, cited a Department of Commerce study entitled "An Analysis of the Impact of Alternative Approaches to Significant Deterioration in the Non-Ferrous Metals Industry." The conclusion of the report that the construction of "new copper and lead smelters would probably be substantially constrained" should not go unexamined.

Several questions arise from a reading of the Commerce report. First, the report uses as its analytic base an early draft of the committee bill, rather than the finished product. This causes it to discount the flexibility around class I areas present in the final committee bill. Second, the report fails to employ realistic growth projections for the industry. The assumption of a 100-percent increase in growth is, as far as I know, unsupported by the economic literature.

In raising these points, I do not wish to downplay the concerns raised by the Commerce Department. I do, however, believe, as I have noted in my statements on the Moss amendment, that only real world experience will determine whether such concerns are justified. As a counterweight to the Commerce study, I believe EPA's conclusions merit attention:

The Senate significant deterioration proposal will not prevent the construction of major, economically sized industrial facilities. Rather, some sources may have to employ different air pollution control strategies such as further control of sulfur dioxide emissions, relocation at an alternative site, construction of taller stacks, or smaller plants, etc.

The importance of this quote lies in the second sentence. After meeting the bill's BACT requirements, industry has a choice of options, including relocation and taller stacks, to meet the class I and II increments. In originally proposing and subsequently supporting nondegradation in the committee, I have consistently relied on EPA analyses that stress the flexibility that relocation and taller stacks give to industry. Such flexibility, after the BACT requirements are met, is essential to the sound implementation of a national nondegradation policy. Accordingly, until we have some data on industry's experience under the provision, it is premature to write off nondegradation as unworkable for the copper, or any other industry.

Mr. GRAVEL. An important body—the National Commission on Air Quality—is created and charged in the committee bill with far-reaching and important duties, among which include a study of the significant deterioration provision. With regard to the issue of significant deterioration, I ask if the study is to consider the increments for sulfur dioxide and total suspended particulate matter established by the measure currently under consideration.

Mr. MUSKIE. Yes. The National Commission on Air Quality is directed by the committee bill as amended by the amendment of the chairman of the Public Works Committee (Mr. Randolph) to study all issues—economic, environmental and social—raised by the significant deterioration provision.

Mr. GRAVEL. Let me say that I am concerned about problems surrounding the current method of using total suspended particulate matter in determining air quality. Present use makes little distinction between the size of particles, the composition and nature of those particles, or the origin of the particulate matter.

Many areas of this country periodically exceed the increments established for particulate matter due to dust which originates from natural sources. In Alaska this is a matter of great concern since many uninhabited areas of the State exceed particulate standards due to dust generated from glacial outwash areas, dry riverbeds and other such areas. Other Western States have similar problems. I am concerned that the Commission should give close attention to the question of natural background levels of pollutants most especially in the Western States.

Mr. MUSKIE. The Senator from New Mexico (Mr. Domenici) had a similar concern, which we discussed extensively on the floor. That discussion emphasized the need for the Commission study, and appeared in the Record on July 27, from pages S12552 through S12554. So the Senator's concerns are shared by the rest of the committee.

Mr. GRAVEL. I believe that it is paramount that the Congress have an impartial study of this important subject. The report of the National Commission of Air Quality established by S. 3219 will provide impartiality.

Mr. BUCKLEY. Mr. President, I wish to state my support for the committee position, which establishes a realistic timetable for phasing in new levels of auto-emissions controls.

The elimination of the automobile as a major source of pollution is now within the capability of the automobile industry. As important, it is within the industry's capability without imposing an unreasonable cost on the public, either in terms of dollars or fuel efficiency.

The administration this spring released a study that was put together by the Federal Energy Administration, the Department of Transportation, and the Environmental Protection Agency. That study is remarkably supportive of the positions taken in the committee bill. It shows that the fuel and dollar costs for the committee proposed standard of 0.4/3.4/1.0 will be relatively minor during the changeover year of 1980, compared to other levels of control, and that these costs and penalties will vanish soon thereafter.

What about fuel economy, which is a major national and individual concern? During the actual transition year to the new statutory level, the committee's timetable produces a 3-percent fuel penalty, compared with the timetable supported by the administration and apparently favored by the industry, the amendment sponsored in the other body by Congressman Dingell. By 1983, the difference in fuel economy will have vanished entirely, based on the use of technological improvements by industry. Even with this minor and temporary penalty—relative to the administration's schedule—the cars that would be built to meet the Senate numbers will continue to achieve better fuel economy each and every year, even the year when the new standards are imposed.

According to this administration study, present auto mileage averages 17.6 miles per gallon. Assuming that the industry makes improvements in technology, the car built to the 1980 committee proposed standard would that year achieve 22.4 miles to the gallon, an increase of 4.8 mpg over present cars, and a fraction of a gallon less than with a perpetual extension of the 1976 standards—1.5/15/3.1. By the early 1980's the car built to the Senate numbers will get the same mileage as the dirtier cars built to the administration's numbers. Even if there were no technological improvements in control technology—and

I cannot believe there will be none—the 1980 car built to the Senate standard would achieve 20.2 mpg, far better than present cars.

In this process, the attainment of the Senate numbers would essentially eliminate the automobile as a significant source of air pollution. The administration's approach would arrive at controls less rapidly and less completely. A perpetual freeze at 1976 levels, of course, would never foster improved air quality.

What about the other major concern, the dollar cost? The administration report also estimates that in the transition year of 1980, the "worst" year under the Senate bill, the "life-time" cost of a new car would be increased \$266, in comparison with the administration's level of controls. That assumes that technology improvements are available under either standards. That sounds like a lot of cash. It is. But that \$266 is based on what the administration study estimates is an average life-time cost of \$16,700 for a car. Thus, effective pollution controls will add, under the administration's calculation, 1.6 percent to the cost of owning and operating a 1980 model car during its 100,000-mile lifetime. Even when assuming no technological improvements, and limiting the calculation to the single, worst year, the increase in lifetime cost is just 3.2 percent. Both discrepancies in cost tail off sharply in subsequent model years to the point that there is virtually no cost differential a few years hence.

Thus, I believe it is fair to say that this administration study refutes the horror stories about fuel and costs that have been circulated. For example this is what the administration study says about a 0.4 NO<sub>x</sub> standard:

Fuel economy penalties of up to 10 percent may be expected in the first year of application and catalyst change would be required. However, with maturity (3-5 years) these systems are expected to achieve optimum fuel economy.

That is for a standard of 0.4 gram per mile for nitrogen oxides. The new Volvo car meets the 0.4 number with fuel economy gains.

Nevertheless, the committee bill backs away from that existing statutory standard for a variety of reasons, including the desire to broaden the technological options for meeting the eventual standard.

The administration study fails to include any relative benefits for increased use of diesel-powered vehicles, which obtain sharply higher fuel economy in comparison with gasoline engines. If diesel cars are built—and I believe we can anticipate significant diesel development only under the standards in the committee's bill, not the administration's numbers—then average fuel economy under S. 3219 could actually turn out to be far better by 1982 than it would ever be under the administration's numbers.

Mr. GRAVEL. I wish to return to the subject of an earlier discussion between the Senator from Tennessee (Mr. Baker) and Senator from New Mexico (Mr. Domenici). As a member of the Senate Public Works Committee that carefully studied this legislation, I want to add my voice to theirs in urging our legislative colleagues in the States to carefully consider the consequences of legislating stricter standards for fluorocarbons than those contained in this legislation.

After careful consideration, we in the committee did not feel that the Congress had sufficient information to rationally legislate a prohibition on the use of fluorocarbons at this time. That is why we called for the extensive and detailed Federal study of the ozone layer. We

were and still are faced with contradictory and conflicting claims supported by partial facts which may or may not be accurate. Under these conditions we felt it ill advised to enact a broad prohibition that would cost thousands of employees their jobs and livelihood and millions of investors their property. Too much stood to be lost if we were wrong for the little time we would have gained, particularly since we included a provision for emergency regulation if the evidence warranted.

Because we did not want to break with precedent we left the States free to legislate a higher standard, should they choose. We did this because we have always permitted the States to act to set higher State standards with regard to similar legislation. In this case, however, I urge the States to heed the call of Senators Baker and Domenici to refrain from legislation until sufficient information is available from the Federal studies to form a rational and reasoned judgment. To legislate now, without sufficient scientific information, would be arbitrary and capricious. Awaiting the necessary scientific and factual information is the path we in the committee and the Congress have chosen. I highly recommend a similar course of action to others who face a like decision.

#### DELAYED COMPLIANCE ORDERS

Mr. RANDOLPH. Progress has been made in bringing major emitting sources into compliance with the requirements of the Clean Air Act. Nevertheless a substantial number of major emitting facilities remain out of compliance with emission limitations contained in State implementation plans.

For this reason the committee, in section 9 of S. 3219, provided for delayed compliance orders and penalties. Such orders could be issued by a State, and after 30 days notice, by the Environmental Protection Agency to such sources requiring compliance as expeditiously as practicable, but in no event later than January 1, 1979.

The potential candidates for such enforcement orders number roughly 3,500, out of approximately 22,000 major emitting sources. These installations include about one-third of our large coal fired electric powerplants, many refinery complexes, and other industrial installations as well as a substantial number of smaller facilities. As of March 1975 the Environmental Protection Agency estimated that 150 to 200, out of 480, coal fired electric powerplants were not in compliance with the requirements of State implementation plans, 125 to 150 out of 200 iron and steel mills, 19 out of 28 nonferrous smelters, 100 to 130 out of 250 refineries, 100 to 130 out of 259 pulp mills, and 800 to 1,200 out of 3,500 industrial and commercial boilers.

Some of these sources of air pollution may have obtained a competitive advantage from noncompliance. In addition, as stated in the committee report—

Many sources continue to find the fees paid to attorneys to resist the requirements of law less expensive than pollution control equipment.

Without question there are such recalcitrants in our society; however, it is unrealistic to assume that America's corporate and utility management, which owns or operates nearly one-sixth of these sources, is so irresponsible to blatantly defy the requirements of the Clean Air Act and risk the fines and imprisonment that are authorized therein. For this reason additional time is provided for under enforcement orders in S. 3219, the Clean Air Amendments of 1976. While this

represents the best judgment of the committee, at this time, on the additional time that would in general be required for these major industrial sources to achieve compliance with the requirements of the Clean Air Act several questions still arise regarding individual case situations that I would like to review for the record.

At the onset, the deadlines established in the Clean Air Amendments of 1970 were arbitrary. The committee intended to evaluate in 1973 the statutory 1975 deadline for achievement of the primary—or health—ambient air quality standard; however, due to other legislative priorities that evaluation is now reflected in the Clean Air Amendments of 1976.

Therefore, I briefly review the implementation of the Clean Air Amendments of 1970 with regard to the actions taken by the States. When the then Administrator of the Environmental Protection Agency, William Ruckelshaus, approved the State implementation plans in 1972, he concluded in the Federal Register on May 31, that—

*It is clear that achieving these rigorous State standards in the time prescribed would significantly enhance air quality in many areas of the Nation, as contemplated by the Clean Air Act. However, in addition to reviewing the effectiveness of each State implementation plan, this Agency and the Federal Government have an obligation to assess the impact of the various plans in the aggregate. From this standpoint, there is strong evidence that the complete implementation of the plans as submitted may not be attainable in the time prescribed.*

Because of physical limitations on our ability to clean the emissions of high sulfur fuels on a large scale in the time permitted by the statute, achievement of the particulars of the State plans would require the availability of large additional supplies of 'clean' fuels—natural gas and low sulfur coal and oil. Since fuel desulfurization facilities are unlikely to be built on the scale which would be required to fully implement all State plans by 1975, it appears that all State plans can be completely implemented by 1975 only with a major short term shift to naturally clean fuels. Unfortunately, these naturally clean fuels are not likely to be available in quantities necessary to meet the projected demand . . .

*Preliminary analysis by EPA indicates the real possibility that . . . all aspects of the State plans in the aggregate cannot be achieved despite the best efforts of both government and the private sector. (Emphasis added)*

What was most disturbing at the time, and is today, is that the Environmental Protection Agency admitted that all aspects of the State implementation plans, in their aggregate, could not be achieved by 1975, despite the best efforts of government and industry. In summary the compliance date extensions being provided for in the Clean Air Amendments of 1976 were inevitable for many major emitting facilities despite the good faith efforts of industry to comply. The failure of the EPA Administrator in 1972 to adjust the State implementation plans to reflect national capabilities for implementation rendered implementation of the State implementation plans impracticable, if not impossible, to execute due to real-world constraints; thus accommodations were necessary from the start.

Addressing this situation on April 12, 1972. I urged realism in the quest for environmental quality. In remarks to the first Government Affairs Seminar by the Air Pollution Control Association I stated:

I have long endorsed the statutory policy that protection of public health should not be subordinated to economic feasibility. This was the underlying premise of the Air Quality Act of 1967. And, I would not want in any way to jeopardize the long-term success of overall Federal environmental policies. But it is obvious to me that short-term environmental concerns have dominated EPA's implementation of the Clean Air Amendments of 1970 so dramatically that our country's energy requirements cannot be met, until unrealistic environmental

constraints, predicated upon protection of public welfare, are slowed down to "reasonable" time schedules. Only that for which there is technology available can be accomplished.

Commenting further on the need for realism in our country's implementation of environmental policies I observed that—

We surely can see our recent failures to make reasonable attempts to implement soundly the Federal and State environmental policies. We have not done well in finding a suitable, or equitable, balance between energy and the environment. . . . Rather, it seems that we have adopted a national posture of environment versus energy, to the very substantial disadvantage of domestic energy supplies. The consequence has been an exacerbation of an already difficult energy supply problem.

This polarization was recognized, in part, by the Environmental Protection Agency in November 1972 when it published its clean fuels policy. At the time the EPA acknowledged the need for changes in overzealous State implementation plans. However, few States initiated actions to revise plans more stringent than required to attain and maintain national ambient air quality standards.

Subsequently, the Congress authorized such revisions in the Energy Supply and Environmental Coordination Act of 1974. Nevertheless, as anticipated by the Environmental Protection Agency, a large number of major emitting sources could not meet the statutory deadlines. Some of these stationary sources chose to ignore the other deadlines, others chose to seek delayed compliance schedules.

On the basis of the available evidence compliance date extensions were granted by Federal, State, and local air pollution control agencies for a number of installations. Such extensions were granted reluctantly on the basis of information as to the practical constraints to compliance to the earlier deadlines set forth in the 1970 amendments. In short there was no alternative for many sources making an apparent good-faith attempt to comply with the statutory deadlines.

This action was taken by many States although inconsistent with the attainment and maintenance deadlines specified in the 1970 amendments. As a consequence the stationary sources receiving such compliance date extensions are subject to potential citizen scrutiny and to inconsistent enforcement actions taken by the EPA Administrator.

In order to correct this situation section 9 of the bill provides for enforcement orders with compliance required no later than January 1, 1979. As appropriate such extensions are to be permitted only where necessary, and are to require conformance with applicable environmental requirements as soon as practicable.

Throughout the committee's deliberations concern was voiced that an effort should be made to create equity and guarantee a reasonable national effort. Nevertheless the date of January 1, 1979, was an arbitrary date for compliance. This action was taken with recognition that it would declare void any previously issued enforcement orders by State air pollution control agencies, with EPA approval, that extended beyond January 1, 1979. This action would be taken to void compliance schedules for major emitting sources that had committed themselves to meeting the emissions requirements of State implementation plans. Moreover, this action by the committee would void the orders no matter how justified such orders are, how carefully they were drawn, and on what practical considerations they were based. Affected will be some 84 industrial operations at 29 major industrial installations in 14 States.

I ask that a list of these sources supplied by the Environmental Protection Agency be reprinted in the Record.

SUMMARY OF FINAL COMPLIANCE DATES FOR STATIONARY SOURCES BEYOND JAN. 1, 1979  
STATIONARY SOURCES—FEDERAL ORDERS POST, JAN. 1, 1979

Name and location	Nature of operation	Pollutant	Final compliance date	Comments
Region I—None. Region II—None. Region III: Jones & Laughlin: Pittsburgh, Pa.	Coke oven combustion stacks.	Particulate matter	If rehabilitate, Mar. 1, 1980; if must install control equipment, 2 yr later. (Last battery)	Stacks: In the negotiated settlement, EPA didn't want more than 1 battery down for rehab at a time. (Emissions to the stack are controlled by coke oven battery rehabilitation.) If the rehab isn't successful, the installation of control equipment is a plus in so far as they are one of the few companies which have agreed to control equipment installation. These rehabs are sequential.
	Coke oven doors.	do	Mar. 1, 1980 (Last battery)	
	Coke oven pushing	do	Dec. 1, 1980 (Last battery)	
	Scarfer	do	Apr. 1, 1979	
	Open hearths	do	Nov. 1, 1979 (Last open hearth)	Doors: Related to battery rehabilitation pushing; control will be accomplished by installation of a yet unproven technology in 1 of the 5 batteries. J & L then is given time to evaluate the system and control the remaining 4 batteries.
				Scarfer: Construction will be complete Jan. 1, 1979. Remaining months are for debugging.
Philadelphia School District: Philadelphia, Pa.	Boilers	Sulfur dioxide	Oct. 31, 1983 (last boiler)	Open hearths: Sequential phasedown—shutdown of all hearths to correspond with opening of new BOF which will comply with NSPS and SIP.
Arco Polymers: Potter, Pa.	Boiler		June 30, 1979	Phased program to bring many school boilers into compliance. Compliance of all boilers at the same time would be economically infeasible. Order tracks state order; using technology which was new and being evaluated at another company's facility.

SUMMARY OF FINAL COMPLIANCE DATES FOR STATIONARY SOURCES BEYOND JAN. 1, 1979—Continued  
STATIONARY SOURCES—FEDERAL ORDERS POST, JAN. 1, 1979—Continued

Name and location	Nature of operation	Pollutant	Final compliance date	Comments
Region IV:				
Gulf Power Co.:				
Panama City, Fla.	Boilers unit 1	Sulfur dioxide	Nov. 1, 1979	The Gulf Power & Tampa Elec. schedules were ordered to achieve compliance with the overly stringent Florida regulation (1.5 lb/million Btu's). The State has proposed revisions for the Gulf Power & Tampa Elec. facilities of 6.17 lb and 6.00 lb respectively. The region preliminary evaluation shows these emission limitations are stringent enough to attain the standard. These schedules have been stayed pending the final disposition of Florida revision. See listing under Gulf Power Co.
Pensacola, Fla.	Boilers unit 2	do	Mar. 1, 1980	
	Boilers unit 4	do	Jan. 1, 1979	
	Boilers unit 5	do	Mar. 1, 1979	
	Boilers unit 6	do	June 1, 1980	
	Boilers unit 7	do	Dec. 1, 1980	
	Boilers unit 8	do	Dec. 1, 1980	
Tampa Electric Co.: Tampa, Fla.	Boilers unit 1	Sulfur dioxide	Oct. 1, 1979	These are emergency units run at about 10 percent capacity only if specified emergency condition exist.
Louisville Gas & Elec., Louisville, Ky.	Boilers unit 2	do	Apr. 1, 1979	
Paddys Run	Boilers unit 1	do	July 1, 1979	These are small peak load units to be shut down in 1985. Interim emission limitations were ordered to protect primary standard.
	Boilers unit 2	do	do	
	Boilers unit 3	do	July 1, 1981	
	Boilers unit 4	do	do	
	Boilers unit 5	do	do	
Cain Run: Louisville, Ky.	Unit 1	do	July 1, 1983	These are all uncontrolled units (rather than control) due to old age.
	Unit 2	do	Jan. 1, 1985	
	Unit 3	do	do	
Region V:				
Central Ill. Light Co.:				
East Peoria, Ill.	Power plant	Particulate matter	June 30, 1970	Installation of FGD in module approach; therefore expeditious.
Bartonsville, Ill.	do	Sulfur dioxide	Dec. 31, 1979	
Jones & Laughlin Steel: Cleveland, Ohio.	Sintering plant	Particulate matter	Dec. 31, 1981	Installation of control equipment (as part of overall plant control schedule, therefore later than if dealing with sinter plant alone).
Region VI:—None.				
Empire District Elec.: Riverton, Kans.	Boilers	Sulfur dioxide	Dec. 31, 1985	The source is situated in priority II AQCR and the schedule therefore has no impact on attainment or maintenance of NAAQS.
Springfield Utilities: Springfield, Mo.	do	Particulate matter	June 1, 1979	
Region VIII—None.				
Region IX—None.				
Region X—None.				

TABLE 5(B).—STATIONARY SOURCES—STATE ORDERS PAST, JAN 1, 1979

Name and location	Nature of operation	Pollutant	Final compliance
Region I—none.			
Region II—none.			
Region III:			
Bethlehem Steel Corp.: Sparrows Point, Md.....	Coke battery 3—Pushing.....	Visible emissions.....	Jan. 31, 1979
	Coke battery 4—Pushing.....	do.....	Do.
	Coke battery 11—Pushing.....	do.....	Feb. 13, 1979
	Coke battery 5—Pushing.....	do.....	Dec. 31, 1979
	Coke battery 7—Pushing.....	do.....	Do.
	Coke battery 8—Pushing.....	do.....	Do.
	Coke battery 12—Pushing.....	do.....	Do.
Delmarva Power & Light Co.: Delaware City, Del....	Boiler.....	Particulate.....	June 1, 1980
	do.....	Sulfur dioxide.....	Do.
	do.....	Visible emissions.....	Do.
Cooper Bessemer Co.: Grove City, Pa.....	Cupola.....	Particulate.....	June 30, 1979
General Electric Co.: Erie, Pa.....	Boiler facilities.....	Sulfur dioxide.....	June 1, 1980
Pennsylvania Power & Light Co.: York Haven, Pa....	Unit 1.....	Particulate.....	Dec. 31, 1980
	do.....	Visible emissions.....	Do.
	Unit 3.....	Particulate.....	June 30, 1981
	do.....	Visible emissions.....	Do.
Pennsylvania Power & Light Co.: Washingtonville, Pa.	Coke-fired boiler 1.....	Particulate.....	Do.
	do.....	Visible emissions.....	Do.
	Coal-fired boiler 2.....	Particulate.....	Dec. 31, 1980
	do.....	Visible emissions.....	Do.
Virginia Solite Corp.: Cascade, Va.....	Kiln 1.....	Particulate.....	Oct. 31, 1979
	Kiln 5.....	do.....	July 1, 1979
Weirton Steel Division: Weirton, W. Va.....	Coke battery 8—Pushing.....	Visible emissions.....	June 30, 1979
	Coke battery 5—Pushing.....	do.....	Do.
	Coke battery 6—Pushing.....	do.....	Do.
	Coke battery 5, 6, 8—Quenching 2.....	do.....	Do.
James J. Lacy Co.: Baltimore, Md.....	Gray Iron Cupola.....	Particulate.....	Dec. 31, 1980
	do.....	Visible emissions.....	Do.
Region IV:			
OLIN Corp.: Brandenburg, Ky.....		Sulfur dioxide.....	June 1, 1979
Gulf Power Co.: Pensacola, Fla.....	Steamplant unit 7.....	do.....	Dec. 1, 1980
Region V—None.			
Region VI—None.			
Region VII:			
Department of the Army: Burlington, Iowa.....	Waste incinerators.....	Particulate.....	Aug. 1, 1980
Kansas Army Ammunition Plant: Parsons, Kans....	Open burning.....	do.....	Jan. 1, 1979
Springfield Utilities: Springfield, Mo.....	Boilers 1 and 2.....	do.....	Do.
Region VIII—None.			
Region IX—None.			
Region X:			
Golden Valley Electricity: Fairbanks Alaska.....	Coal boiler.....	do.....	Oct. 30, 1980
Puget Sound Naval Shipyard: Bremerton, Wash....	Industrial blast material.....	do.....	June 1, 1980

Mr. RANDOLPH. As expected, this list includes such sources as steel mills, such as the coke battery at the Weirton Steel Division in Weirton, W. Va., and the coke battery at Sparrows Point, Md. In addition, the list includes chemical plants, investor-owned power generators and foundries. The list also includes facilities owned by the Philadelphia School District, the U.S. Army and Navy, municipal power companies, and rural cooperatives.

Among the stationary sources with compliance dates beyond January 1, 1979, under existing enforcement orders are eight boilers of the Louisville Gas & Electric Co. This company has been cited in reports by the Senate Committee on Public Works and by the Environmental Protection Agency as one of the most cooperative and progressive electric companies in the United States, because of their pioneering efforts to install sulfur oxide scrubber systems. However, certain of the compliance dates for facilities of the Louisville Gas & Electric Co., are later than January 1, 1979. These dates were formulated for the company as a system to reflect consideration by the EPA of the company's financial ability and the time necessary to design, construct and install control equipment on the various units on the whole system, without disrupting reliability of the service.

This situation was called to my attention after the committee reported this measure. I am concerned that after praising this company for its good faith efforts and cooperative attitude in complying with the 1970 Clean Air Amendments that we are now proposing to void the enforcement order under which these facilities are being brought into compliance for the entire system of Louisville Gas & Electric Co.

My remarks have been addressed to those installations that are operating under enforcement orders. In addition there is an increasing body of evidence that suggests that it would be physically impossible for all the electric power in the United States to be brought into compliance by January 1, 1979, because of anticipated shortages of complying fuels or appropriate emission control systems.

By the selection of January 1, 1979, for compliance with applicable emission requirements regardless of the commitment of the source, we are legislatively mandating a finding of bad faith in all cases where compliance will not be accomplished by that date. Based on such a presumption tremendous "delayed compliance penalties" are to be levied automatically by the State or the EPA. Such penalties would be levied in addition to the other enforcement actions, sanctions, and penalties authorized in the act.

Moreover these penalties will be passed on to the consumer.

The penalties in the Clean Air Amendments of 1976 are intended to be action forcing for those installations that are resisting compliance with air pollution requirements. For this purpose the January 1, 1979, deadline is appropriate. However, I am not convinced that adequate consideration has been given to those instances where a good-faith attempt is being made to comply but additional time is required. The penalties are of little value for the improvement of air quality if the means are not available to expedite compliance. This has been recognized by the States and Federal regulatory agencies in issuing existing enforcement orders. Further consideration must be given to this situation when the House and Senate conferees address this matter.

#### INNOVATIVE CONTROL TECHNIQUES

I wish to address the provision of the amendments concerned with delayed compliance orders for innovative control techniques. I refer to paragraph (4) of subsection 113(d) which allows a source to request an additional 2-year period beyond January 1, 1979, until January 1, 1981, where such source intends to comply with requirements of the Clean Air Act through the use of innovative technologies.

I ask that an extract from the committee report on this provision be reprinted.

#### EXTRACT

As used here, "change in production process" contemplates only a fundamentally different method of production rather than a modification to a process which essentially remains the same. If such a fundamental change may involve different changes in different parts of the process or in identifiable segments, the bond or surety shall be reduced as those various parts of that process are converted to the new production process.

The other alternative involves a request by a source that it be allowed to comply through the use of an innovative production process or a control technique that has the potential for emission reduction significantly greater than those required by the applicable emission limitations, or at a cost for control that is

significantly less and would also offer the potential for industry-wide application. In these cases, the source is given until January 1, 1981, to achieve compliance.

This provision is intended to serve as an incentive to industry to adopt innovations that will have wide application. The States and the Administrator are expected to extend this two-year grace period only in cases that offer this broad potential for national benefits.

Any such allowable delay in compliance relating to the use of innovative technologies has the effect of delaying until 1981 the dates when the bonding requirement or the delayed compliance penalty will be imposed. It does not remove the applicable requirement.

If the recipient of the technological waiver plans to replace its production capacity with an entirely new process or facility, the Administrator is expected to require that the applicant post a bond or other surety to assure that the existing equipment or capacity will be taken out of service by January 1, 1981, as promised. If the waiver is based on use of a new technique on existing equipment or process, the State and the Administrator are expected to set a 1981 delayed compliance penalty for that source, just as they will for any normal source that must meet the 1979 deadlines. The penalty will be based on capital costs, interest cost, operating costs, and the economic value gained by delay, and it will be determined like any similar penalty or a facility that did not receive a technology extension.

The potential spoken of is, and I quote, "the potential for emission reduction significantly greater than those required by the applicable emission limitation, or at a cost for control that is significantly less and would also offer the potential for industry-wide application," end quote.

This provision is intended to stimulate the implementation of more cost-effective solutions to air pollution control.

For example, we are all familiar with the large volumes of sludge that are generated by presently available sulfur oxide scrubbers. Besides the cost of the control systems, there are substantial costs associated with the environmentally sound disposal of the resultant sludge. In considering any alternative control systems this sludge disposal cost also must be considered.

More innovative techniques presently under development include fuel cleaning technologies and coal gasification and liquefaction as well as advanced designs for sulfur oxide scrubbers that produce usable byproducts such as elemental sulfur or sulfuric acid.

I ask the Senator from Maine (Mr. Muskie), am I correct in my interpretation of the committee's action on innovative control technologies? Was it not the intention of the committee that technologies under development on coal cleaning and for coal gasification and liquefaction would be considered innovative control technologies for the purposes of this section? Likewise, would not second and third generation sulfur oxide scrubbers be considered innovative control techniques, provided that applicable emission limitations are met on a more cost-effective basis.

Mr. MUSKIE. This provision will be the most productive if it is used on a limited basis by existing sources to achieve compliance. It should be used to encourage commercial demonstration of new techniques. Therefore, enough such sample cases should be allowed in order to test the systems under various conditions. If, on the other hand, it is used broadly to apply to large numbers of sources who adopt these technologies, then either: First, it will encourage the adoption of those techniques before they are proven and enhance the likelihood that a great number of sources may adopt a technique that ends up not working; or second, the technique is ready now for adoption

industry wide and does not need to be proven or encouraged by the use of this incentive. In this case, the incentive merely becomes a large loophole to give a lot of sources an additional 2 years to do things that have been proven. The demonstration is no longer a demonstration if it is adopted on a massive basis.

The new subsection 113(d)(3) would be greatly misconstrued if it were made available to attempts to commercialize new energy technologies and production processes. If this were allowed, then it is possible that these new technologies could come on line and sources would be allowed to avoid meeting emission standards for 2 years. This would be an unacceptable erosion of the concept of new source performance standards. New sources are to meet the performance standards at the time of start-up, not after a 2-year compliance date extension. If a plant needs to pollute for 2 years, that indicates that something is basically wrong with its design, and it should not be allowed to operate until corrections are made.

The new subsection 113(d)(4) is available on a limited basis for existing sources employing new production processes, but only when those new processes are replacing existing sources at the site of the old facilities.

Let me mention briefly the specific technologies you have discussed.

#### COAL CLEANING TECHNIQUES

While truly innovative coal cleaning techniques would be eligible, this would only be for a limited number of cases in order to encourage the development of the technology. Once that technology is proven, then it must be adopted routinely. Otherwise, the development of the new technology, after its development is proven, would provide an automatic 2-year extension for the entire industry, if that technology is adopted throughout the industry.

#### COAL GASIFICATION AND LIQUEFACTION

These are not relevant to the provision. These are new sources. This provision is not applicable to new sources. These are not new control techniques as much as they are entire new production processes. They are not applied at existing plants, and therefore a cleanup schedule is not even relevant.

The only relevant standard here is the new source performance standard. New sources do not get "compliance orders," but rather do not gain approval for their permit unless they have complied with the new source performance standard. Since compliance orders are not given the concept of a delay compliance order makes no sense.

There is only one condition where a new process, such as coal gasification for industrial processes, could be considered an innovative control technique. That would be where an existing source determined that in order to comply with the applicable State implementation plans, it would construct such a plant as an integrated part of its facility for the purpose of supplying clean fuel in order to meet the emission limitation established for the source. The source would have chosen this approach in preference to adopting retrofit cleanup technology that cleans stack gases after combustion. The new process, of

course, would have to be innovative and either have the potential of industrywide application at significantly lower costs or be likely to reduce emissions significantly below the level required by the State implementation plan. It could not be a fuel supplied by a third party.

#### SECOND- AND THIRD-GENERATION SULFUR SCRUBBERS

A limited number of these should be eligible as innovative control techniques, just the same as coal cleaning.

Mr. BUCKLEY. I would like to reiterate a few points on specific provisions in this bill that may merit attention. We have not had as much discussion as I anticipated on the Senate's requirement for the use of best available control technology. This is a vital provision to the long-term good of the Nation.

I think we all recognize that great inertia exists against improving pollution control technology. Money on better controls simply does not show up favorably on corporate balance sheets.

But, if we are going to make room for the kind of industrial expansion we will need to carry us into the 21st century, we are going to need to augment vastly our pollution control techniques.

We must create ways to evolve better pollution control. This bill does that. It does it by allowing each State the flexibility to set best available control technology at the level it seems best, by granting time delays for innovative technology, and by other methods. We need to make these technological gains.

Let me turn now to the specter of land-use planning, which we have avoided in this bill. The Clean Air Act mandates the attainment of clean air. But within that single constraint, the States are given broad flexibility. This bill is not a Trojan horse, allowing the Federal Government to sneak into a State to impose draconian land-use restrictions. Land use is properly a decision for the States, not the Federal Government.

Another key question centers on the problem of preventing significant deterioration and the setting of the baseline from which to measure the increment. The evaluation of this baseline is entirely prospective. No studies of the baseline, from which the increment is calculated, are made for an area until a proposed major source files a permit application with the State. No baselines exist today. It has been a failure to grasp this fact that has produced some of the confusion in the debates of recent days. None will exist until an applicant makes a site-location request. Once the baseline is set, it is then up to the State to judge how wide an area is covered by that baseline: whether it covers a county or some other area of land that is smaller or larger.

There is one particular provision on which little has been said, but from which much can be expected. It is the so-called deep-pocketing provision—section 35—which requires that the Federal Government reimburse private parties for their costs of litigation if the private party is successful in the lawsuit under this act that involves the Federal Government as plaintiff or defendant. This recovery includes actions when the private party is defending his rights or when the private party is the plaintiff in a suit forcing the Federal Government to take actions that it may be required to take. This provision is designed to provide balance for the public against harassment by overzealous Federal prosecutors.

I think we must recognize that the public often enters the courtroom at a distinct disadvantage in litigation with the Federal Government. The funds of a private citizen are limited, while those of the Federal Government are virtually endless. There is no way to completely eliminate such an imbalance. But I believe we must do all that we can to provide at least a measure of protection for the private citizen who may otherwise face harassment by the bureaucracy.

This is a meaningful bill. Although it is clearly the result of many compromises, large and small, between Members of widely differing views, the final product is, in my opinion, a remarkably effective measure.

Mr. KENNEDY. The most important and far-reaching provisions of the bill are surely the ones relating to the so-called no significant deterioration doctrine. The bill extends the authority of the Environmental Protection Agency, in cooperation with the individual States, to protect areas of the country where air quality is presently cleaner than the existing national air quality standards for sulfur oxides and particulates. This section of the bill was the one that caused the most controversy and it was the one most hotly debated on the floor.

I would venture to say, that most of the Senators who participated found that debate a useful one, that they learned from it, and that through this process their opinions began to coalesce around the position taken by the Public Works Committee. And when the amendment came up to strike the nondegradation section from the bill, the vote was almost 2 to 1 in favor of the committee's position.

The bill does many other important things which may tend to be overlooked because of a single controversial provision.

It sets up a National Commission on Air Quality, composed of congressional and public members, and State Governors, and gives it specific tasks with respect to studying the effects of air pollution on public health and well being.

It extends the present deadline for cleaning up hydrocarbon and carbon monoxide automobile emissions by 1 year, and raises the allowable level for emission of nitrogen oxides from .4 to 1 gram per mile.

It authorizes the Administrator of the Environmental Protection Agency to ban the use of Freon as an aerosol propellant upon a finding that such continued use would reduce the stratospheric ozone concentration and thereby endanger human health or welfare.

The PRESIDING OFFICER. The bill having been read the third time, the question is, Shall it pass? On this question, the yeas and nays have been ordered.

Mr. HANSEN. A vital concern all of us should have about legislation of this kind is its effect on our ability to obtain the energy resources needed to keep this country running. I say this because of our increasing dependence on foreign oil and the substantial decline this year in domestic oil and gas production.

The Washington Post today carried an editorial from the Houston Chronicle which aptly expressed the frustration of many of us over the failure of Congress to enact a realistic and comprehensive energy policy.

The editorial said:

It defies any attempt at rational understanding, how Congress, beset by a national security problem in the shortage of domestic energy, has nevertheless determined that the way to get more is to make it more difficult to get more.

The editor concluded:

We are saying that Congress is actively and intentionally discouraging the energy industry from trying to solve the problem—taking the diametrically opposite course from the proven method of achieving national goals. And it is a national disgrace.

We have got to find ways to function as a sovereign nation, independent of the threat of an oil embargo. We cannot do this unless we encourage the production of sufficient domestic sources of energy to become independent. By far our most extensive untapped domestic fuel resource is Western coal. At the present time, and for the immediate future, the only technological capability we have for greater utilization of coal is by burning it in electric generating plants and using it in experimental synthetic fuel plants. These activities unavoidably will result in a measure of air pollution.

We cannot produce sufficient energy at home to meet our needs if we pass legislation that inhibits that production.

I do not believe this bill is the kind of legislation that will inhibit our search for energy independence, but I have discussed this aspect at such length because of my strong belief that Congress has done a poor job of relating the effect of many bills which are considered to our energy situation. We had better start looking more carefully at the effects of what we do on our energy status, and on our national security, which is very much tied to our ability to secure sufficient energy.

We also owe a commitment to the people to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of our population.

In Wyoming and the West, we have clean air. We are proud of it and we want to keep it that way. The benefits of our clean air are shared by millions of Americans who visit our parks and recreation areas every year. I support the premise in the bill that air in and over our national parks should remain as pure as possible. I believe the States should have a say in the siting of plants, as the bill provides, but airsheds cross State lines, and the national interest emerges.

In Wyoming, the issue crystalizes and comes into sharp focus. Two national parks, Yellowstone and Grand Teton, are within a few hundred miles of the Nation's largest undeveloped coal deposits.

I have concerns that the Clean Air Act amendments set up criteria which leave to technical analysis the determination as to whether new coal-fired facilities, as well as other industrial developments, can be sited in much of the area of the western States which contain the coal we have to develop. The technical determinations which will be so influential in these decisions will be based on speculative mathematical models of regional airsheds. I agree with the premise that it is difficult to remedy or clean the air after a facility is built and operating, but I caution that time's awasting. Delay is acceptable only if we are certain of our measuring capabilities. Let us get our meteorological measuring act together and in place.

I am convinced that this legislation will not unduly restrict our ability to grow and produce energy. I believe it will protect air quality in those areas that we, as a Nation, have determined are special to us.

Mr. ROBERT C. BYRD. I announce that, if present and voting, the Senator from California (Mr. Tunney) would vote "yea."

The result was—yeas 78, nays 13, as follows:

[Rollcall Vote No. 482 Leg.]

## YEAS—78

Abourezk	Glenn	Montoya
Baker	Gravel	Morgan
Bayh	Griffin	Muskie
Beall	Hansen	Nelson
Bellmon	Hart, Gary	Nunn
Bentsen	Haskell	Packwood
Brooke	Hatfield	Pastore
Buckley	Hathaway	Pearson
Bumpers	Hollings	Pell
Burdick	Hruska	Percy
Byrd, Harry F., Jr.	Huddleston	Proxmire
Byrd, Robert C.	Humphrey	Randolph
Cannon	Inouye	Ribicoff
Case	Jackson	Roth
Chiles	Javits	Scott, Hugh
Church	Johnston	Sparkman
Clark	Kennedy	Stafford
Cranston	Leahy	Stevens
Culver	Long	Stevenson
Dole	Magnuson	Stone
Domenici	Mansfield	Symington
Durkin	Mathias	Taft
Eagleton	McClure	Talmadge
Eastland	McGee	Weicker
Fong	McIntyre	Williams
Ford	Mondale	Young

## NAYS—13

Allen	Goldwater	Scott, William L.
Bartlett	Helms	Thurmond
Curtis	Laxalt	Tower
Fannin	McClellan	
Garn	Moss	

## NOT VOTING—9

Biden	Hartke	Schweiker
Brock	McGovern	Stennis
Hart, Philip A.	Metcalf	Tunney

So the bill (S. 3219) was passed, as follows:

## S. 3219

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

SECTION 1. (a) The third sentence of subsection (b) of section 105 of the Clean Air Act is amended to read as follows: "No agency shall receive any grant under this section during any fiscal year when its expenditures of non-Federal funds for other than nonrecurrent expenditures for air pollution control programs will be less than its expenditures were for such programs during the preceding fiscal year, unless the Administrator determines that a reduction in expenditures is attributable to a nonselective reduction in expenditures in the programs of all executive branch agencies of the applicable unit of government; and no agency shall receive any grant under this section with respect to the maintenance of a program for the prevention and control of air pollution unless the Administrator is satisfied that such grant will be so used to supplement and, to the extent practicable, increase the level of State, local, or other non-Federal funds that would in the absence of such grant be made available for the maintenance of such program, and will in no event supplant such State, local, or other non-Federal funds."

(b) Subsection (c) of section 105 of the Clean Air Act is amended by adding the following: "In fiscal year 1977 and subsequent fiscal years, subject to the

provisions of subsection (b) of this section, no State shall receive less than one-half of 1 per centum of the annual appropriation for grants under this section for grants to agencies within such State."

SEC. 2. Section 107 of the Clean Air Act is amended by adding a new subsection as follows:

"(d) (1) For the purpose of transportation control planning, prevention of significant deterioration, and for other purposes, each State, within one hundred and twenty days after the date of enactment of the Clean Air Amendments of 1976, shall submit to the Administrator a list, together with a summary of the available information, identifying those air quality control regions, or portions thereof, established pursuant to this section in such State which on the date of enactment of the Clean Air Amendments of 1976—

"(A) do not meet a national primary ambient air quality standard for any mobile source related air pollutant;

"(B) do not meet, or in the judgment of the State may not in the time period required by an applicable implementation plan attain or maintain, any national primary ambient air quality standard for any pollutants other than those listed in subparagraph (A) of this paragraph through the proved or promulgated pursuant to section 110 of this Act;

"(C) do not meet a national secondary ambient air quality standard;

"(D) cannot be classified under subparagraph (B) or (C) of this paragraph on the basis of available information, for ambient air quality levels for sulfur oxides or particulate matter; or

"(E) have ambient air quality levels better than any national primary or secondary air quality standard other than for sulfur oxides or particulate matter, or for which there is not sufficient data to be classified under subparagraph (A) of this paragraph.

"(2) Not later than sixty days after submittal of the list under paragraph (1) of this subsection the Administrator shall promulgate each such list with such modifications as he deems necessary. Whenever the Administrator proposes to modify a list submitted by a State, he shall notify the State and request all available data relating to such region or portion, and provide such State with an opportunity to demonstrate why any proposed modification is inappropriate.

"(3) Any region or portion thereof which is not classified under subparagraph (B) or (C) of paragraph (1) of this subsection for sulfur oxides or particulate matter within one hundred and eighty days after enactment of the Clean Air Amendments of 1976 shall be deemed to be a region classified under subparagraph (D) of paragraph (1) of this subsection.

"(4) A State may from time to time review, and as appropriate revise and re-submit, the list required under this subsection. The Administrator shall consider and promulgate such revised list in accordance with this subsection."

SEC. 3. The first sentence of section 108(b) (1) of the Clean Air Act is amended by striking the words "technology and costs of emission control" and inserting in lieu thereof the words "cost of installation and operation, energy requirements, air quality benefits, and environmental impact of the emission control technology."

SEC. 4. Section 108 of the Clean Air Act is amended by adding new subsections as follows:

"(e) The Administrator shall, after consultation with the Secretary of Transportation and the Secretary of Housing and Urban Development and State and local officials and within one hundred and eighty days after the enactment of this subsection, and from time to time thereafter, publish guidelines on the basic program elements for the transportation planning process assisted under subsection (h) of section 110 of this Act. Such guidelines shall include information on—

"(1) methods to identify and evaluate alternative planning and control activities;

"(2) methods of reviewing plans on a regular basis as conditions change or new information is presented;

"(3) identification of funds and other resources necessary to implement the plan, including interagency agreements on providing such funds and resources;

"(4) methods to assure participation by the public in all phases of the planning process; and

"(5) such other methods as the Administrator determines necessary to carry out a continuous planning process.

"(f) (1) The Administrator shall publish and make available to appropriate Federal agencies, States, and air pollution control agencies, including agencies

assisted under subsection (h) of section 110 of this Act, within six months after enactment of this subsection for clauses (i), (ii), (iii), and (iv) of subparagraph (A) and within one year after the enactment of this subsection for the balance of this subsection (and from time to time thereafter), (A) information, prepared, as appropriate, in cooperation with the Secretary of Transportation, regarding processes, procedures, and methods to reduce or control each such pollutant, including but not limited to—

- “(i) motor vehicle emission inspection and maintenance programs;
- “(ii) programs to control vapor emissions from fuel transfer and storage operations and operations using solvents;
- “(iii) programs for improved public transit;
- “(iv) programs to establish exclusive bus and carpool lanes and areawide carpool programs;
- “(v) programs to limit portions of road surfaces or certain sections of the metropolitan areas to the use of common carriers, both as to time and place;
- “(vi) programs for long-range transit improvements involving new transportation policies and transportation facilities or major changes in existing facilities;
- “(vii) programs to control on-street parking and new offstreet parking facilities;
- “(viii) programs to construct new parking facilities and operate existing parking facilities for the purpose of park and ride lots and fringe parking;
- “(ix) programs to limit portions of road surfaces or certain sections of the metropolitan area to the use of nonmotorized vehicles or pedestrian use, both as to time and place;
- “(x) provisions for employer participation in programs to encourage carpooling, vanpooling, mass transit, bicycling, and walking;
- “(xi) programs for secure bicycle storage facilities and other facilities, including bicycle lanes, for the convenience and protection of bicyclists, in both public and private areas;
- “(xii) programs of staggered hours of work;
- “(xiii) programs to institute road user charges, tolls, or differential rates to discourage single occupancy automobile trips;
- “(xiv) programs to control extended idling of vehicles;
- “(xv) programs to reduce emissions by improvements in traffic flow;
- “(xvi) programs for the conversion of fleet vehicles to cleaner engines or fuels, or to otherwise control fleet vehicle operations;
- “(xvii) programs for retrofit of emission devices or controls on vehicles and engines, other than light duty vehicles, not subject to regulations under section 202 of title II of this Act; and
- “(xviii) programs to reduce motor vehicle emissions which are caused by extreme cold start conditions;

(B) information on additional methods or strategies that will contribute to the reduction of mobile source related pollutants during periods in which any primary ambient air quality standard will be exceeded during any extension under subsection (h) of section 110 of this Act and during episodes for which an air pollution alert or emergency has been declared; (C) information on other measures which may be employed to reduce the impact on public health or protect the health of sensitive or susceptible individuals or groups; and (D) information on the extent to which any process, procedure, or method to reduce or control such air pollutant may cause an increase in the emissions or formation of any other pollutant.

“(2) In publishing such information the Administrator shall describe (A) the effectiveness of such processes, procedures, and methods; (B) factors related to the costs and benefits of such processes, procedures, and methods, in different situations; (C) transportation factors related to such processes, procedures, and methods; (D) the environmental, energy, and economic impact of such processes, procedures, and methods; and (E) his assessment of whether each such process, procedure, or method is reasonable for application to attain a primary ambient air quality standard.”.

SEC. 5 (a) Section 110 of the Clean Air Act is amended by adding a new sentence at the end of paragraph (1) of subsection (a) as follows: “Each State shall adopt and submit to the Administrator within eight months after the date of enactment of the Clean Air Amendments of 1976, a revision of its implementation plan which provides for implementation, maintenance and enforcement of the provisions of subsection (g) of this section for the prevention of significant deterioration in each appropriate air quality control region (or portion thereof) within such State.”.

(b) Section 110(a) (2) (B) of the Clean Air Act is amended to read as follows:

"(B) it includes emission limitations, schedules, and timetables for compliance with such limitations, and, in addition, as may be necessary, (i) to assure attainment and maintenance of such primary or secondary standard, such other measures, including, but not limited to, transportation controls, and enforceable supplemental emission reduction strategies for existing nonferrous smelters, and (ii) land-use controls for the purpose of maintenance of, or to prevent further deterioration from, any primary ambient air quality standard: *Provided, however,* That land-use controls shall be included in an implementation plan only after consideration of the energy, environmental, and economic impacts of such controls;"

(c) Section 110(a) (2) (D) of the Clean Air Act is amended by inserting after "(D) it includes" and before "a procedure" the following: "a program to provide for the enforcement of emission limitations and regulation of the modification, construction, and operation of any stationary source, including a permit or equivalent program for any major emitting facility, within such region to assure (i) that national ambient air quality standards are achieved and maintained, (ii) that the requirements of subsection (g) of this section are met, and (iii)".

(d) Section 110(a) (2) (H) of the Clean Air Act is amended by striking "or" before "(ii)" and by striking the period and adding at the end thereof: ", or to incorporate the requirements of subsection (g) of this section; or (iii) to incorporate any additional requirements established under the Clean Air Amendments of 1976."

(e) Section 110(a) (4) of the Clean Air Act is amended by inserting after "primary or secondary standard" the following: "or which will not comply with a standard of performance under section 111, or which does not conform to the requirements of subsection (g) of this section."

(f) Section 110(d) of the Clean Air Act is amended by striking the period and inserting at the end thereof "and the requirements of subsection (g) of this section."

SEC. 6. Section 110 of the Clean Air Act is amended by adding a new subsection as follows:

"(g) Each implementation plan shall include requirements applicable to each region identified in the list promulgated pursuant to paragraph (1) (D) of subsection (d) of section 107 of this Act, which shall, in addition to the requirements of paragraphs (2), (3), (4), (5), and (6) of this subsection, provide:

"(A) for designation as class I areas or—

"(i) all international parks, and each national wilderness area, and national memorial park which exceeds five thousand acres in size, and each national park which exceeds six thousand acres in size;

"(ii) such other areas as the State (and, if appropriate, after notice and consultation with adjacent States) may designate, except that Federal lands may be so designated only with the concurrence of the Federal Land Manager;

"(B) each national park and national wilderness area or any part thereof, which exceeds five thousand acres in size, established after the enactment of the Clean Air Amendments of 1976, shall be classified as either class I or class II by the Congress in the designating legislation for such national park or wilderness area.

"(C) that all remaining areas in such State identified under section 107(d) (1) (D) of this Act and not designated class I pursuant to subparagraph (A) of this paragraph shall be designated as class II areas.

"(2) As it relates to the pollutants particulate matter and sulfur dioxide, the cumulative change in the air quality in any area designated under paragraph (1) of this subsection resulting from the construction and operation of any new major emitting facility or facilities shall be limited to the following projected increases in pollutant concentrations over the baseline air quality concentration:

"Pollutant	(In micrograms per cubic meter)
Particulate matter:	
Annual geometric mean.....	10
Twenty-four-hour maximum.....	30
Sulfur dioxide:	
Annual arithmetic mean.....	15
Twenty-four-hour maximum.....	100
Three-hour maximum.....	700

"(3) Requirements applicable to an area designated as class I or class II shall include a management program to assure that, in the event of the proposed construction of any major emitting facility in any such area, the construction of such facility shall be preceded by an analysis of the ambient air quality, climate and meteorology, soils and vegetation, and visibility at the site of the proposed facility and in the area potentially affected by the emissions from the proposed facility for each pollutant regulated under this Act which will be emitted from, or which results from the construction or operation of, such facility. Such analysis shall be included in any permit application required.

"(4) No major emitting facility on which construction is commenced after June 1, 1975, may be constructed in any area designated under this subsection—

"(A) unless a permit has been issued for such proposed facility in accordance with this section, setting forth emission limitations for such facility which conform to the requirements of this subsection.

"(B) unless the proposed facility is subject to the best available control technology for each pollutant subject to regulation under this Act emitted from, or which results from such facility,

"(C) unless the owner or operator of such facility demonstrates that emissions of particulate matter and sulfur oxides will not contribute to a cumulative change in the air quality in excess of that allowed in paragraph (2) of this subsection.

"(D) unless the provisions of paragraph (5) of this subsection with respect to protection of class I areas have been complied with for such facility,

"(E) unless there has been an analysis of any air quality impacts projected for the area as a result of growth associated with such facility, and

"(F) unless there has been opportunity for a public hearing conducted by a State on any proposed permit for such facility, with an opportunity for interested parties, including representatives of the Administrator, to appear and provide testimony on such facility, including alternatives thereto, and control technology requirements.

"(5) (A) The State shall provide notice of any permit application to the Administrator and the Administrator shall provide notice of the permit application to the Federal Land Manager and the Federal official charged with direct responsibility for management of any lands within a class I area which may be affected by emissions from the proposed facility.

"(B) The Federal Land Manager and the Federal Official charged with direct responsibility for management of such lands shall have an affirmative responsibility to protect the air quality related values of any such lands within a class I area and to consider in consultation with the Administrator, whether a proposed major emitting facility will have an adverse impact on such values.

"(C) In any case where the Federal official charged with direct responsibility for management of any lands within a class I area or the Federal Land Manager of such lands, or the Administrator, or the Governor of an adjacent State containing such a class I area files a notice alleging that emissions from a proposed major emitting facility may cause or contribute to a change in the air quality in such area and identifying the potential adverse impact of such change, a permit shall not be issued unless the owner or operator of such facility demonstrates that emissions of particulate matter and sulfur dioxide will not contribute to a cumulative change in air quality in excess of the following projected increases in pollutant concentrations over the baseline air quality concentration:

*Pollutant (in micrograms per cubic meter)*

Particulate matter:

Annual geometric mean-----	5
24-hour maximum-----	10

Sulfur dioxide:

Annual arithmetic mean-----	2
24-hour maximum-----	2
3-hour maximum-----	25

*Provided, That* (i) in any case where the Federal Land Manager demonstrates to the satisfaction of the State that the emissions from such facility will have an adverse impact on the air quality-related values of such lands, notwithstanding the fact that the change in air quality resulting from emissions from such facility will not exceed for such lands the limitations on projected increases established in this subparagraph, a permit shall not be issued, and (ii) in any case where the owner or operator of such facility demonstrates to the satisfaction of the

Federal Land Manager, and the Federal Land Manager so certifies, that the emissions from such facility will have no adverse impact on the air quality related values of such lands, notwithstanding the fact that the change in air quality resulting from emissions from such facility will exceed for such lands the limitations on projected increases established in this subparagraph, the State may issue a permit.

"(6) For purposes of this subsection—

"(A) the term 'best available control technology' means an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under this Act emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques, including fuel cleaning or treatment, for control of each such pollutant. In no event shall application of 'best available control technology' result in emissions of any pollutants which will exceed the emissions allowed by any applicable standard established pursuant to section 111 or 112 of this Act;

"(B) the term 'Federal Land Manager' means (i) the Secretary of the department with authority over any lands of the United States, and (ii) Indian tribes which have legal jurisdiction over tribal lands; and

"(C) the term 'commenced' as applied to construction of a major emitting facility means that the owner or operator has obtained all necessary preconstruction approvals or permits required by Federal, State, or local laws or regulations and either has (i) begun, or caused to begin, a continuous program of physical on-site construction of the facility or (ii) entered into binding agreements or contractual obligations, which cannot be canceled or modified without substantial loss to the owner or operator, to undertake a program of construction of the facility to be completed within a reasonable time: *Provided*, That in the case of a facility on which construction was commenced in accordance with this definition after June 1, 1975, and prior to the enactment of the Clean Air Amendments of 1976, the review and permitting of such facility shall be in accordance with the regulations for the prevention of significant deterioration in effect prior to the enactment of the Clean Air Amendments of 1976.

"(7) (A) Until a revision of the implementation plan in accordance with this subsection is submitted and approved, significant deterioration for those pollutants covered by such regulations shall be regulated pursuant to applicable regulations and procedures for prevention of significant deterioration established under authority of the Clean Air Act in effect prior to the enactment of the Clean Air Amendments of 1976, except as those regulations provide for designations of nondeterioration areas which allow increases in emissions of air pollutants or any reduction in air quality inconsistent with paragraphs (1) and (2) of this subsection, or do not require the degree of control required by paragraph (6) (A) of this subsection, or are otherwise inconsistent with the requirements of this subsection.

"(B) For the purpose of this section any State may submit the revision to its implementation plan relating to the prevention of significant deterioration which has been adopted for such State as of the date of enactment of the Clean Air Amendments of 1976. Such requirements shall be the requirements applicable to such State under this section unless the Administrator finds that such requirements or a portion thereof are inconsistent with the requirements of this subsection and notifies the State of such inconsistency.

"(8) The Administrator shall study strategies to control pollutants not covered by paragraph (2) of this subsection in order to prevent significant deterioration of air quality for such pollutants and shall report to the Congress within one year after the date of enactment of the Clean Air Amendments of 1976 recommending control strategies for such pollutants. Such report shall recommend increments, as appropriate, for class I and class II areas applicable to the emissions from stationary sources of nitrogen oxides, hydrocarbons, and such other pollutants and control strategies as the Administrator determines to be appropriate.

"(9) The Administrator shall, and a Governor may, take such measures under section 113 or 304 of this Act, including seeking injunctive relief, as necessary to prevent the issuance of a permit under this subsection or the construction of a major emitting facility which does not conform to the requirements of paragraphs (4) and (5) of this subsection.

"(10) In the event any State adjacent to a State subject to the requirements of this subsection disagrees with the designation of any class I area in the State subject to the requirements, or if a permit is proposed to be issued for any new major emitting facility proposed for construction in an adjoining State which the Governor of the affected State determines will cause or contribute to a cumulative change in air quality in excess of that allowed in this subsection in any class I or class II area within the affected State, the Governor may request the Administrator to enter into negotiations with the States involved to resolve such dispute. If requested by any State involved, the Administrator shall make a recommendation to resolve the dispute and protect the air quality related values of the lands in such State. If the States involved do not reach agreement, the Administrator shall resolve the dispute and his determination, or the results of agreements reached through other means, shall become part of the applicable plan and shall be enforceable as part of such plan.

"(11) Notwithstanding paragraphs (2), (4), and (5) of this subsection, in no instance shall the Administrator approve any requirements or revision of any implementation plan, nor shall any permitting authority issue a permit under this subsection for a new major emitting facility, which would allow for the deterioration of air quality to a level that would exceed any national ambient air quality standard.

"(12) Nothing in this subsection shall alter or affect section 116 of this Act."

SEC. 7. (a) Section 110 of the Clean Air Act is amended by adding subsection (h) as follows:

"(h) (1) Upon application by the Governor of a State on or after June 1, 1976, the Administrator may extend for not more than five years the deadline for attainment of national primary ambient air quality standards required under this section where transportation control measures are necessary for the attainment of such standards and where the implementation of such control measures by the date established in existing implementation plans would have serious adverse social or economic effects.

"(2) The Administrator may consider extension applications for only those air quality control regions in which the State has:

"(A) implemented or will have implemented by June 1, 1977, (i) the requirements of the applicable implementation plan with respect to stationary source emissions of transportation-related pollutants, and (ii) implemented or will have begun implementing by June 1, 1977, all reasonably available measures of the applicable transportation control plan which do not have serious adverse social or economic effects; and

"(B) completed, or agreed to complete by June 1, 1978, a detailed planning study that evidences public and local governmental involvement in accordance with paragraph (7) of this subsection and includes (i) examination of alternative measures and combinations of measures to attain and maintain the standards after June 1, 1977, (ii) a description of projects to be undertaken together with timetables and resource requirements, and (iii) identification and analysis of social, economic, and environmental effects including public health and energy conservation effects of such measures and projects.

"(3) Each extension application shall be accompanied by adequate documentation of compliance with the requirements of paragraph (2) above, and shall include a description of the process for the development of an implementation plan for the extension period requested. Such plan shall be submitted no later than June 1, 1978. The plan shall at a minimum:

"(A) identify the remaining emission reductions necessary for attainment of the national primary ambient air quality standards and the additional reasonably available measures to be implemented to accomplish these reductions;

"(B) provide for the implementation of all reasonably available control measures as expeditiously as practicable;

"(C) identify the financial and manpower resources to be committed to carrying out the plan;

"(D) include written evidence that the State, the general purpose local government or governments, or a regional agency designated by general purpose local governments for such purpose, have adopted by statute, regulation, ordinance, or other legally enforceable document, the necessary requirements and schedules and timetables for compliance, and are committed to implement and enforce the appropriate elements of the plan;

"(E) demonstrate (i) attainment of the national primary ambient air quality standards as expeditiously as practicable, but no later than May 31, 1982, or (ii) that such attainment is not possible within the extension period prior to

May 31, 1982, despite implementation of all reasonably available control measures.

"(4) (A) Within one hundred and twenty days following the submission of an application and all supporting materials, and after providing an opportunity for public hearing, the Administrator shall grant an extension, unless he determines that the requirements of this subsection have not been met.

"(B) If the Administrator determines that the requirements of this subsection have not been met, including findings relating to the impacts of the transportation control measures upon the social economic, energy conservation, and environmental welfare of the air quality control region, he shall notify the Governor of deficiencies in the application, including his judgment as to acceptable dates for implementing measures included in the plan and as to the appropriate duration of an extension. The notification shall also specify a date for the submission of a revised application.

"(5) Where the Administrator grants an extension based on an application meeting the requirements of paragraph (3) (E) (ii) of this subsection, the Governor of the State may, on or after June 1, 1981, apply for a further extension in accordance with and subject to the requirements of this subsection. No extension under this paragraph or other portion of this Act may extend beyond May 31, 1987.

"(6) (A) Where the Administrator denies an extension application or where the Governor of a State in which the national primary ambient air quality standards are not being met does not submit an application or revised application under this subsection, the Administrator shall, after consultation with appropriate State and local elected officials and after opportunity for public hearing in the affected State if no such hearing has been previously held, propose and promulgate an implementation plan (or portion thereof) meeting the requirements of this subsection. In proposing and promulgating such plan, the Administrator shall comply with the time requirement and schedules of this subsection. The United States court of appeals for the appropriate circuit may grant a stay of any provision of such plan upon application by a State pursuant to section 307 of this Act.

"(B) The Administrator may delegate the implementation or enforcement of any portion of a promulgated plan to one or more general purpose local governments or a State.

"(7) (A) The implementation plan required by paragraph (3) of this subsection shall be prepared by an organization of elected officials of local governments designated by agreement of the local governments in an affected area, and recognized by the State for this purpose. Where such an organization has not been designated by agreement within six months after the enactment of the Clean Air Amendments of 1976, the Governor (or, in the case of an interstate area, Governors), after consultation with elected officials of local governments, shall designate an organization of elected officials of local governments in the affected area to prepare such plan. Where feasible, such organization shall be the metropolitan planning organization designated to conduct the continuing, cooperative and comprehensive transportation planning process for the area under section 134 of title 23, United States Code, or the organization responsible for the air quality maintenance planning process under regulations implementing this section, or the organization with both responsibilities.

"(B) The preparation of the implementation plan required by paragraph (3) of this subsection shall be coordinated with the continuing, cooperative, and comprehensive transportation planning process required under section 134 of title 23, United States Code, and the air quality maintenance planning process required under this section, and such planning processes shall take into account the requirements of this subsection.

"(8) (A) The Administrator shall make grants to any organization of local elected officials with transportation or air quality maintenance planning responsibilities recognized by the State under paragraph (7) of this subsection for payment of the reasonable costs of developing an air quality transportation control plan under this section.

"(B) The amount granted to any organization under subparagraph (A) of this paragraph shall be 100 per centum of any additional costs of developing an air quality transportation control plan under this section for the first two fiscal years following receipt of the grant under this paragraph, and shall supplement any funds available under Federal law to such organization for transportation or air quality maintenance planning. Grants under this paragraph shall not be used for construction.

"(9) (A) The Administrator shall not approve any projects or award any grants authorized by this Act or any other authority of the Administrator after June 1, 1977, in any State in which any primary ambient air quality standard has not been attained, where transportation control measures are necessary for the attainment of such standard and the Governor has not applied for an extension in accordance with this subsection, or where the Governor has not submitted an implementation plan by June 1, 1978.

"(B) In any area in which the State or, as the case may be, the general purpose local government or governments or any regional agency designated by such general purpose local governments for such purpose, is not implementing any requirement of an approved or promulgated plan under this section, including any condition of the extension under paragraph (2) of this subsection, the Administrator shall decrease funds or grants for any projects authorized by any authority of the Administrator by fifteen per centum for each year during the period any such requirement is not being implemented.

"(10) (A) No department, agency, or instrumentality of the Federal Government shall (i) engage in, (ii) support in any way or provide financial assistance for, (iii) license or permit, or (iv) approve, any activity which does not conform to a plan after it has been approved or promulgated under this section. No metropolitan planning organization designated under section 134 of title 23, United States Code, shall give its approval to any project, program, or plan which does not conform to a plan approved or promulgated under this section. The assurance of conformity to such a plan shall be an affirmative responsibility of the head of such department, agency, or instrumentality.

"(B) Each department, agency, or instrumentality of the Federal Government having authority to conduct or support any program with air-quality related transportation consequences shall give priority in the exercise of such authority, consistent with statutory requirements for allocation among States or other jurisdictions, to the implementation of those portions of plans prepared under this section to achieve and maintain the national primary ambient air-quality standard. This paragraph extends to, but is not limited to, authority exercised under the Urban Mass Transportation Act, as amended, title 23 of the United States Code, and the Housing and Urban Development Act, as amended."

(b) Section 110 of the Clean Air Act is amended by adding a new subsection as follows:

"(1) In carrying out the requirements of subsections (a) (2) (B) (i) and (ii), (g) and (h) of this section and subsections (d) and (g) of section 113, the State shall provide a satisfactory process of consultation with general purpose local governments and designated organizations of elected officials of local governments, in accordance with adequate consultation. Such regulations shall be promulgated after notice and opportunity for public hearing and not later than four months after the date of enactment of the Clean Air Amendments of 1976. The Administrator may disapprove any portion of a plan relating to any measure described in the first sentence of this subsection or to the consultation process required under this subsection if he determines that such plan does not meet the requirements of this subsection. Only a general purpose unit of local government, regional agency, or council of governments adversely affected by action of the Administrator approving any portion of a plan referred to in this subsection may petition for review of such action on the basis of a violation of the requirements of this subsection."

SEC. 8. The Clean Air Act is amended by adding a new subsection (e) to section 112 as follows:

"(e) For purposes of this section the Administrator may promulgate a hazardous emission standard in terms of a design, equipment, or operational standard if he determines that such standard is necessary to control emissions of a hazardous pollutant or pollutants because, in the judgment of the Administrator, they cannot or should not be emitted through a conveyance designed and constructed to emit or capture such pollutants."

SEC. 9. (a) Section 113 of the Clean Air Act is amended by adding the following new subsection:

"(d) (1) A State (or, after thirty days notice to the State, the Administrator) may issue an enforcement order for any stationary source which specifies a date for final compliance with an applicable emission limitation later than the date for attainment of any national ambient air quality standard specified in the applicable implementation plan: *Provided*, That (a) such order is issued after notice to the public (and, as appropriate, to the Administrator) containing the content of the proposed order and opportunity for public hearing; (B) the order

contains a schedule and timetable for compliance; (C) the order contains any interim control measures the State (or the Administrator) deems to be reasonable, and the order requires the emission monitoring and reporting by the source authorized to be required under sections 110(a)(2)(F) and 114(a)(1); (D) the order provides for final compliance with the emission limitation in the applicable implementation plans as expeditiously as practicable, but in no event later than January 1, 1979; and (E) in the case of a major emitting facility, the order provides that it will be amended no later than January 1, 1978, to contain a provision requiring the source to pay monthly a delayed compliance penalty, in an amount equal to that sum established by the Administrator pursuant to section 120 of this Act, in the event such major emitting facility fails to comply by January 1, 1979.

"(2) An enforcement order proposed by a State shall issue under this subsection unless the Administrator, within ninety days of receipt of any proposed order, objects in writing to the issuance of such order as not consistent with the requirements of paragraph (1) of this subsection. If the Administrator so objects, he shall simultaneously proceed to issue an enforcement order in accordance with this subsection. Nothing in this section shall be construed as limiting the authority of a State or political subdivision to adopt and enforce a more stringent emission limitation or more expeditious schedule or timetable for compliance than that contained in an order by the Administrator.

"(3) If any source not in compliance with an emission limitation in an applicable implementation plan gives written notification to the State (or the Administrator) that such source intends to comply by means of replacement of the facility, a complete change in production process, or a termination of operation, the State (or the Administrator) may issue an order under paragraph (1) of this subsection permitting the source to operate until January 1, 1979, without any interim schedule of compliance: *Provided*, That as a condition of such issuance, the owner or operator of such source shall post a bond or other surety in an amount equal to the cost of actual compliance by such facility and any economic value which may accrue to the owner or operator of such source by reason of the failure to comply. If a source for which the bond or other surety required by this paragraph has been posted fails to replace the facility, change the production process, or terminate the operations as specified in the order by the required date, the owner or operator shall immediately forfeit on the bond or other surety and the State (or the Administrator) shall have no discretion to modify the order under this paragraph or to compromise the bond or other surety.

"(4) In the case of a major emitting facility which proposes to comply with an applicable emission limitation through replacing existing production capacity with an innovative production process which will result in an emission reduction significantly greater than required by the emission limitation applicable to such facility, or with the installation of an innovative control technique that has a substantial likelihood for enabling the source to comply with the applicable emission limitation by achieving a significantly greater emission reduction than that required by the applicable emission limitation, or by achieving the required reduction with an innovative system that will have potential for industry-wide application at a significantly lower cost than the systems which have been determined by the Administrator to be adequately demonstrated, the date required for compliance applicable to such facility under paragraphs (1) and (3) of this subsection and section 120 of this Act shall be January 1, 1981.

"(5) (A) In the case of a major emitting facility which—

"(i) is ordered to convert to coal under an order pursuant to section 2(a) of the Energy Supply and Environmental Coordination Act of 1974, or

"(ii) within one year after enactment of the Clean Air Amendments of 1976 gives notice of intent to convert to coal as its primary energy source because of actual or anticipated curtailment of natural gas supplies under any curtailment plan or schedule approved by the Federal Power Commission (or, in the case of intrastate natural gas supplies, approved by the appropriate State regulatory commission).

and which thereby would no longer be in compliance with an applicable emission limitation under an implementation plan, an enforcement order may be issued under paragraph (1) of this subsection for such facility which specifies a date for final compliance with the applicable emission limitation later than the date for attainment of any national ambient air quality standard specified in the applicable implementation plan: *Provided*, That the order provides for final compliance with the emission limitation in the applicable implementation plan as expeditiously as practicable, but in no event later than three years after the

date of an order under section 2(a) of the Energy Supply and Environmental Coordination Act of 1974 or three years after giving notice under clause (ii) of this subparagraph, which date shall be the date required for compliance applicable to such facility under paragraphs (1) and (3) of this subsection and section 120 of this Act and in no event shall be later than July 1, 1980.

"(B) In issuing an order under this paragraph, the State shall prescribe (and may from time to time modify) emission limitations, requirements respecting pollution characteristics of coal, or other enforceable measures for control of emissions for each facility to which such an order applies. Such limitations, requirements, and measures shall be those which the State determines must be complied with by the facility in order to assure (throughout the period before the date for final compliance established in the order) that the burning of coal by such source will not result in emissions which cause or contribute to concentrations of any air pollutant in excess of any national primary ambient air quality standard for such pollutant.

"(C) The Administrator of the Federal Energy Administration may, by regulation, establish priorities under which manufacturers of continuous emission reduction systems necessary to carry out this paragraph shall provide such systems to users thereof, if he finds, after consultation with the States and the Administrator, that priorities must be imposed in order to assure that such systems are first provided to sources subject to orders under this paragraph in air quality standards have not been achieved. No regulation under this subparagraph may impair the obligation of any contract entered into before the date of enactment of the Clean Air Amendments of 1976.

"(6) For the purposes of sections 110, 304, and 307 of this Act, any order issued or approved by the State (or the Administrator) pursuant to this subsection shall become part of the applicable implementation plan.

"(7) (A) During the period of the enforcement order issued under this subsection and where the owner or operator is in compliance with the terms of such enforcement order, no other enforcement action pursuant to this section or section 304 of this Act shall be pursued against such owner or operator based upon noncompliance during the period the order is in effect with the emission limitation for the source covered by such order.

"(B) The failure of any source subject to an enforcement order under this subsection to adhere to the schedule and timetable of compliance established under this subsection during the period of the order, shall make such source subject to the provisions of subsections (a), (b), and (c) of this section.

"(8) No extension, postponement, waiver, or delay of any requirement of an implementation plan applicable to a major emitting facility shall be granted except in accordance with this subsection or section 110(f) of this Act: *Provided, however,* That neither this subsection nor section 120 of this Act shall be construed as limiting the authority of any State to revise any deadline for attainment of a national secondary ambient air quality standard.

"(9) Any actions of the Administrator pursuant to this subsection, including any objection under paragraph (2) of this subsection, shall be considered a final action for purposes of section 307 of this Act.

"(10) Any enforcement order issued under subsection (a) of this section or any consent decree in an enforcement action which is in effect on the day of enactment of the Clean Air Amendments of 1976 shall remain in effect to the extent that such order or consent decree is not inconsistent with the requirements of this subsection and section 120 of this Act. Any such enforcement order issued under subsection (a) of this section or consent decree which provides for an extension beyond January 1, 1979, is void unless modified to comply with the requirements of this subsection."

(b) The Clean Air Act is amended by adding a new section 120 as follows:

#### "DELAYED COMPLIANCE PENALTY

"SEC. 120. (a) Prior to January 1, 1978, any enforcement order issued under subsection (d) of section 113 of this Act shall be amended to include a delayed compliance penalty established pursuant to this section which shall be imposed automatically and payable monthly for any major emitting facility which for any reason not entirely beyond the control of the owner or operator is not in compliance with an applicable emission limitation on January 1, 1979.

"(b) As an enforceable interim step under any enforcement order issued under section 113(d) of this Act, the owner or operator of any major emitting facility not in compliance with an applicable emission limitation, for which such order

specifies a date for compliance after January 1, 1978, shall, prior to January 1, 1977, furnish to the State (with a copy to the Administrator) information containing a detailed description of the control technology or system proposed to achieve compliance with the applicable emission limitation and the estimated cost of compliance, including capital costs, debt service costs, the estimated schedule of expenditures to comply with such limitation or requirement by January 1, 1979, and the estimated annual costs of operation and maintenance of any technology or system required in order to maintain such compliance, together with such information as the State (or the Administrator) may require on the economic value which a delay in compliance beyond January 1, 1979, may have for the owner or operator of such facility.

"(c) (1) A notice of receipt of information pursuant to subsection (b) of this section shall be published in the newspapers in general circulation in such State, and such notice shall set forth where copies of the information are available for inspection and, for a reasonable charge, copying.

"(2) (A) Within sixty days following the date of publication of the notice issued under paragraph (1) of this subsection there shall be published in the newspapers in general circulation in such State (and, as appropriate, the Federal Register or any publication required as part of any rulemaking activity in such State) the proposed delayed compliance penalty applicable to the major emitting facility, with an announcement of an opportunity for a public hearing on such action.

"(B) Such proposed delayed compliance penalty under subparagraph (A) of this paragraph, determined in accordance with guideline published by the Administrator, shall be a monthly payment in an amount no less than the monthly equivalent of the capital costs of compliance and debt service over a normal amortization period, not to exceed ten years, operation and maintenance costs foregone as a result of noncompliance, and the economic value which a delay in compliance beyond January 1, 1979, may have for the owner or operator of such major emitting facility.

"(C) The State shall take final action establishing such delayed compliance penalty within sixty days after the date of publication of the proposed penalty under subparagraph (A) of this paragraph.

"(d) (1) A delayed compliance penalty established by a State under this section shall apply unless the Administrator, within ninety days after the date of publication of the proposed penalty under subsection (c) (2) (A) of this section, objects in writing to the amount of the penalty as less than would be required to comply with guidelines established by the Administrator.

"(2) If the Administrator objects under this subsection, he shall immediately establish a substitute delayed compliance penalty applicable to such facility.

"(e) (1) In the event an owner or operator contests the delay compliance penalty established under this section the owner or operator may within sixty days seek review of such penalty in the appropriate United States district court.

"(2) (A) Except as provided in subparagraph (B) of this paragraph, in no event shall any challenge or review taken under this subsection operate to stay or otherwise delay the obligation of a facility not in compliance with an applicable emission limitation to commence monthly payment of the delayed compliance penalty as determined by the State (or the Administrator) on January 1, 1979, pending the outcome of any such review.

"(B) In any challenge of the imposition of the penalty based on an allegation that the failure to comply by January 1, 1979, was due to reasons entirely beyond the control of the owner or operator, the obligation to commence monthly payment of the delayed compliance penalty may be stayed pending the outcome of such challenge: *Provided*, That as a condition of such stay, the owner or operator of such source shall post a bond or other surety in an amount equal to the potential liability for such penalty during the period of the stay.

"(3) If an owner or operator is successful in any challenge or review proceedings under this subsection, the court may award such relief as necessary, including cancellation of the bond, rebate of any payments, or adjustment of the amount of payments required by the order.

"(f) In any case where a State does not have sufficient authority to issue a delayed compliance penalty, the Administrator after thirty days notice to the State shall establish, implement, and enforce such penalty.

"(g) Failure to make any payment required by an order under this section and section 113(d) of this Act or to submit information required under this section shall, in addition to liability for such payments, subject the owner or

operator of a major emitting facility operating pursuant to an enforcement order issued under section 113(d) of this Act to a penalty under subsection (e) of section 113 of this Act.

"(h) Any actions pursuant to this section, including any objection of the Administrator under subsection (d)(1) of this section, shall be considered a final action for purposes of section 307 of this Act.

"(i) Any enforcement orders, payments, sanctions, or other requirements under this section shall be in addition to any other permits, orders, payments, sanctions, or other requirements established under this Act, and shall in no way effect any civil or criminal enforcement proceedings brought under any provision of this Act or State or local law.

"(j) In the case of an emission limitation approved or promulgated by the Administrator after the enactment of the Clean Air Amendments of 1976 which is more stringent than the emission limitation for the source under the applicable implementation plan in effect prior to such approval or promulgation, if any, or where there was no emission limitation approved or promulgated before enactment of the Clean Air Amendments of 1976, the date for imposition of the delayed compliance penalty under subsection (a) of this section, and for purposes of subsections (b), (c)(2)(B), and (e) of this section, shall be either January 1, 1979, or the date on which the source is required to be in full compliance with the emission limitation, whichever is later, but in no event later than three years after the approval or promulgation of such emission limitation."

SEC. 10. The Clean Air Act is amended:

(a) By amending subsection (b) of section 113 to read as follows:

"(b) The Administrator shall commence a civil action for appropriate relief, including a permanent or temporary injunction, or to assess and recover a civil penalty of not more than \$10,000 per day of violation or both, whenever any person—

"(1) violates or fails or refuses to comply with any order issued under subsection (a) or (d) of this section; or

"(2) violates any requirement of an applicable implementation plan (A) during any period of federally assumed enforcement, or (B) more than thirty days after having been notified by the Administrator under subsection (a)(1) of a finding that such person is violating such requirement; or

"(3) violates section 111(e), 112(c), 119(g), 120(b), or 120(g); or

"(4) fails or refuses to comply with any requirement of section 114.

Any action under this subsection shall be brought in the district court of the United States for the district in which the defendant is located or resides or is doing business, and such court shall have jurisdiction to restrain such violation, to require compliance, and assess such penalty. Notice of the commencement of such action shall be given to the appropriate State air pollution control agency."

(b) By amending subsection (c) of section 113—

(1) to amend paragraph (1)(B) to read as follows:

"(B) violates or fails or refuses to comply with any order under subsection (a) or (d) of this section, or"; and

(2) to add a new paragraph (3) as follows:

"(3) For the purpose of this subsection, the term 'person' shall mean, in addition to the definition contained in section 302(e) of this Act, any responsible corporate officer."

(c) By adding the following new subsections to section 113:

"(e) In any case where a person is in knowing violation of a provision of an implementation plan applicable to a stationary source, where there has been no request for an enforcement order extending the date of compliance concerning such source filed pursuant to subsection (d) of this section within one hundred and eighty days after enactment of the Clean Air Amendments of 1976 (unless such an order has been issued under this section without any such request), or where a person is in violation of the requirements of subsection (b) or (g) of section 120 of this Act, such person shall be punished by a fine of not more than \$25,000 per day of violation.

"(f) If it is alleged that interference with the achievement or maintenance of any national primary or secondary ambient air quality standard will result from any major emitting facility in any region of a State other than the State in which the facility is or may be located, the Administrator, at the request of the Governor of such other State, shall review the operation or proposed operation of such facility and, if necessary to prevent interference with the achievement or maintenance of any national primary or secondary ambient air quality

standard in such other State, he shall take such measures, including seeking injunctive relief, as necessary to prevent such interference.”.

SEC. 11. Section 113 of the Clean Air Act is amended by adding the following new subsection:

“(g) (1) No major emitting facility shall be constructed or modified in any air quality control region or portion thereof in which any national ambient air quality standard is exceeded, if such facility will emit air pollutants subject to such standard so as to prevent the attainment or maintenance of such standard, except that a facility proposed for construction or modification at an existing site or plant owned or controlled by the owner or operator of such facility may be constructed or modified in such region if the owner or operator demonstrates to the satisfaction of the State that (A) the proposed facility will comply with the best available control technology (as defined in section 110(g) (6) (A) of this Act) applicable to such proposed facility before the proposed facility begins operation, (B) all existing sources owned or controlled by the owner or operator of the proposed facility in the same air quality control region as the proposed facility either are in compliance with all applicable emission limitations or are in compliance with an approved schedule and timetable for compliance under a provision of an applicable implementation plan under section 110 of this Act or an enforcement order issued under section 113(d) of this Act, (C) the total cumulative emissions from the existing sources at the proposed facility location and the proposed facilities will at no time increase, (D) the total allowable emissions from all existing and proposed sources at the proposed facility location will be sufficiently less than the total allowable emissions from the existing sources under the implementation plan or an approved schedule and timetable for compliance applicable prior to the request to construct or modify so as to represent reasonable further progress toward attainment of the applicable national ambient air quality standard, taking into account progress already made.

“(2) After January 1, 1979, only a proposed facility where all existing sources owned or controlled by the owner or operator of the proposed facility in the same air quality control region as the proposed facility are in compliance with all emission limitations under an applicable implementation plan under section 110 of this Act shall be eligible for an exception under paragraph (1) of this subsection.

“(3) The provisions of this subsection shall not be available where a State has not made any appropriate revision in the applicable implementation plan to include the emission limitations established for sources at the proposed facility location under paragraph (1) (D) of this subsection.”.

SEC. 12. Section 115 of the Clean Air Act is amended to read as follows:

“SEC. 115. (a) Whenever the Administrator, upon receipt of requests, reports, surveys, or studies from any duly constituted international agency, has reason to believe that any air pollutant or pollutants emitted in the United States endanger the health or welfare of persons in a foreign country, or whenever the Secretary of State requests him to do so with respect to such pollutant or pollutants which the Secretary of State alleges is of such a nature, the Administrator shall give formal notification thereof to such Governor of the State in which such emissions originate.

“(b) The notice of the Administrator shall operate as finding under clause (ii) of subparagraph (II) of subsection (a) (2) of section 110 of this Act and any foreign country adversely affected by the emission of pollutant or pollutants shall be invited to appear at any public hearing associated with any revision of the appropriate portion of the applicable implementation plan.

“(c) This section shall apply only to a foreign country which the Administrator determines has given the United States essentially the same rights with respect to the prevention or control of air pollution occurring in that country as is given that country by this section.

“(d) Recommendations issued following any abatement conference conducted prior to the enactment of the Clean Air Amendments of 1976 shall remain in effect with respect to any pollutant for which no national ambient air quality standard has been established under section 109 of this Act. However, the Administrator, after consultation with all agencies which were party to the conference may rescind any such recommendation on ground of obsolescence.”.

SEC. 13. Section 117 of the Clean Air Act is amended—

- (1) to strike subsections (a) through (c);
- (2) to renumber subsections (d) and (e) as subsections (a) and (b), respectively; and
- (3) to amend redesignated subsection (b)—

(A) by striking the words "the Board and" the first time the word "Board" appears and inserting in lieu thereof the word "any"; and

(B) by striking the words "of the Board" the second time the word "Board" appears.

SEC. 14. Section 118 of the Clean Air Act is amended by striking in the first sentence thereof the words "comply with Federal, State, interstate, and local requirements respecting control and abatement of air pollution to the same extent that any person is subject to such requirements," and inserting in lieu thereof the words "be subject to, and comply with, all Federal, State, interstate, and local requirements, both substantive and procedural (including any requirement for permits or reporting or any provisions for injunctive relief and such sanctions as may be imposed by a court to enforce such relief), respecting control and abatement of air pollution in the same manner, and to the same extent, as any person is subject to such requirements, including the payment of reasonable service charges. Neither the United States nor any agent, employee, nor officer thereof shall be immune or exempt from any process or sanction of any State or Federal court with respect to the enforcement of any such injunctive relief."

SEC. 15. (a) (1) Section 119 of the Clean Air Act, as amended, is hereby repealed. All references to section 119 or subsections thereof in section 2 of the Energy Supply and Environmental Coordination Act of 1974 (Public Law 93-319) shall be construed to refer to section 113(d) of the Clean Air Act and to paragraph (5) thereof in particular. Any certification or notification required to be given by the Administrator of the Environmental Protection Agency under section 2 of the Energy Supply and Environmental Coordination Act of 1974 shall be given instead by the appropriate State.

(2) In the case of any major emitting facility to which any requirement is applicable under section 113(d) (5) (B) of the Clean Air Act and for which certification is required under section 2 of the Energy Supply and Environmental Coordination Act of 1974, the State shall certify the date which it determines is the earliest date that such facility will be able to comply with all such requirements. In the case of any plant or installation which the State determines (after consultation with the Administrator of the Environmental Protection Agency) will not be subject to an order under section 113(d) of the Clean Air Act and for which certification is required under section 2 of the Energy Supply and Environmental Coordination Act of 1974, the State shall certify the date which it determines is the earliest date that such plant or installation will be able to burn coal in compliance with all applicable emission limitations under the implementation plan.

(3) Any certification required under section 2 of the Energy Supply and Environmental Coordination Act of 1974 or under this subsection may be provided in an enforcement order under section 113(d) of the Clean Air Act.

(b) Section 111(a) of the Clean Air Act, as amended, is amended by adding the following new paragraph:

"(7) A conversion to coal (A) by reason of an order under section 2(a) of the Energy Supply and Environmental Coordination Act of 1974, or (B) which qualifies under section 113(d) (5) (A) (ii) of this Act, shall not be deemed to be a modification for purposes of paragraphs (2) and (4) of this subsection."

SEC. 16. (a) Title I of the Clean Air Act is amended by adding at the end thereof the following new part:

## "PART B—OZONE PROTECTION

### "PURPOSES

"SEC. 150. The purposes of this part are (1) to provide for a better understanding of the effects of human actions on the ozone in the stratosphere, (2) to provide for a better understanding of the effects of changes in the ozone in the stratosphere on the public health and welfare, and (3) to authorize the regulation of activities which affect the ozone in the stratosphere in such a way as to cause or contribute to endangerment of the public health or welfare.

### "FINDINGS AND DEFINITIONS

"SEC. 151. (a) The Congress finds, on the basis of presently available information, that—

"(1) halocarbon compounds introduced into the environment potentially threaten to reduce the concentration of ozone in the stratosphere;

"(2) ozone reduction will lead to increased incidence of solar ultraviolet radiation at the surface of the Earth;

"(3) increased incidence of solar ultraviolet radiation is likely to cause increased rates of disease in humans (including increased rates of skin cancer), threaten food crops, and otherwise damage the natural environment; and

"(4) other substances, practices, processes, and activities may affect the ozone in the stratosphere, and should be investigated to give early warning of any potential problem and to develop the basis for possible future regulatory action.

"(b) For the purpose of this part—

"(1) the term 'halocarbon' means the chemical compounds  $\text{CFCl}_2$  and  $\text{CF}_2\text{Cl}_2$ , other chlorofluoromethanes, and such other halogenated compounds as the Administrator determines may threaten to contribute to reductions in the concentration of the ozone in the stratosphere;

"(2) The term 'stratosphere' means that part of the atmosphere above the tropopause; and

"(3) the term 'aerosol containers' means pressurized dispensing containers.

#### "STUDIES AND REPORTS

"SEC. 152. (a) The Administrator shall undertake to contract with the National Academy of Sciences to—

"(1) continue the study begun prior to enactment of this part and report to the Administrator and the Congress not later than July 1, 1976, concerning the nature and likelihood of potential direct and indirect effects on the public health and welfare from the release of halocarbons into the atmosphere; and

"(2) perform further studies and report to the Administrator and the Congress not later than October 1, 1977, on—

"(A) the nature and likelihood of potential direct and indirect effects on the ozone in the stratosphere from the release of halocarbons into the atmosphere;

"(B) the nature and likelihood of potential direct and indirect effects on the ozone in the stratosphere from other substances, practices, processes, or activities;

"(C) the nature and likelihood of potential direct and indirect effects on public health or welfare from changes in the ozone in the stratosphere; and

"(D) methods to control or replace halocarbons or other substances, practices, processes, or activities which may affect the ozone in the stratosphere.

"(b) The Secretary of Labor shall study and transmit reports to the Administrator and the Congress (1) not later than October 1, 1976, with respect to the losses and gains to industry and employment which could result from the elimination of the use of halocarbons in aerosol containers and recommended means of alleviating unemployment or other undesirable economic impact, if any, resulting therefrom; and (2) not later than October 1, 1977, with respect to the losses and gains to industry and employment which could result from the control of uses of halocarbon compounds other than in aerosol containers, and recommended means of alleviating unemployment or other undesirable economic impact, if any, resulting therefrom.

"(c) (1) The National Aeronautics and Space Administration shall—

"(A) pursuant to its authority under title IV of the National Aeronautics and Space Act of 1958, as amended by Public Law 94-39, continue programs of research, technology, and monitoring of the stratosphere for the purpose of understanding the physics and chemistry of the stratosphere and for the early detection of potentially harmful changes in the ozone in the stratosphere;

"(B) in implementing this subsection, coordinate the programs of all Federal agencies relating to the research, technology, and monitoring of the phenomena of the upper atmosphere, including the stratosphere;

"(C) transmit reports by October 1, 1976, by October 1, 1977, and from time to time thereafter, but at least once each Congress, to the Administrator and the Congress on the results of the programs authorized in this subsection, together with any appropriate recommendations for Federal action, including regulations.

"(2) Nothing in title IV of the National Aeronautics and Space Act of 1958, as amended, or this Act shall prevent the National Aeronautics and Space Administration from delegating operational monitoring of the stratosphere to another appropriate Federal agency.

"(d) The Administrator of the National Oceanic and Atmospheric Administration shall continue programs of research and monitoring of the atmosphere for the purpose of early detection of potentially harmful changes in the ozone in the stratosphere and the climatic effects of reduction of ozone in the stratosphere and transmit reports by October 1, 1976, by October 1, 1977, and from time to time

thereafter, but at least once each Congress, to the Administrator, the National Aeronautics and Space Administration, and the Congress on the results of such programs, together with any appropriate recommendations for Federal action, including regulations.

"(e) The Director of the National Science Foundation shall encourage and support ongoing stratospheric research programs and continuing research programs that will increase scientific knowledge of the effects of changes in the ozone layer in the stratosphere upon living organisms and ecosystems; and transmit reports by October 1, 1976, by October 1, 1977, and from time to time thereafter but at least once each Congress, to the Administrator, the National Aeronautics and Space Administration, and the Congress on the results of such programs, together with any appropriate recommendations for Federal action, including regulations.

"(f) The Secretary of Agriculture shall encourage and support continuing research programs that will increase scientific knowledge of the effects of changes in the ozone in the stratosphere upon animals, crops, and other plant life; and shall transmit reports by October 1, 1976, by October 1, 1977, and from time to time thereafter but at least once each Congress, to the Administrator and the Congress on the results of such programs together with any appropriate recommendations for Federal action, including regulations.

"(g) The Secretary of Health, Education, and Welfare shall—

"(1) encourage and support continuing research programs that will increase scientific knowledge of the effects of changes in the ozone in the stratosphere upon human health; and shall transmit reports by October 1, 1976, by October 1, 1977, and from time to time thereafter, but at least once each Congress, to the Administrator and the Congress on the results of such programs, together with any appropriate recommendations for Federal action, including regulations.

"(2) In carrying out the programs authorized by this subsection, utilize the National Institute of Environmental Health Science to coordinate the programs of all Federal agencies relating to research into the effects upon human health of changes in the ozone layer in the stratosphere.

"(h) The Food and Drug Administration, in cooperation with the Consumer Product Safety Commission, shall consider proposed substitutes for halocarbons in aerosol containers and other uses and shall propose regulations to assure that such substitutes do not adversely affect human health, directly or indirectly.

"(i) The Administrator shall—

"(1) encourage and support continuing research programs that will increase scientific knowledge of the effects on public health and welfare of changes in the ozone layer in the stratosphere. Such research shall be coordinated with other Federal agencies identified in this section. He shall report to the Congress on the findings of such research by October 1, 1976, by October 1, 1977, and from time to time thereafter, but at least once each Congress.

"(2) not later than two years after the date of the enactment of the Clean Air Amendments of 1976, submit to the Congress a summary report of the results of the studies and research conducted under this section by the Environmental Protection Agency and other Federal agencies. The Administrator shall include in the report a summary of his actions regulating sources of halocarbons and his recommendations for control of substances, practices, processes, and activities other than those involving halocarbons, which are found to affect the ozone in the stratosphere and which may cause or contribute to harmful effects on public health or welfare.

"(j) In carrying out the programs provided for in subsection (b) through (i) of this section, the agencies responsible shall enlist and encourage assistance from the Nation's institutions of higher education and private organizations, including industrial, labor, consumer, environmental and other organizations, coordinate such activity with the other appropriate agencies, and solicit and consider the views of the Administrator with regard to plans for the research technology and monitoring involved so that such research technology and monitoring will help provide the information base for the Administrator to decide whether regulatory action is necessary and to take such action if it is necessary.

"(k) The Administrator shall convene a Management Council to facilitate coordination of the programs authorized under this part, which Council shall (A) be comprised of the officials responsible for the research efforts of the agencies required to perform research under this part, and of such other agencies as the Administrator may designate; (B) review plans and funding for pertinent research and studies in order to provide the information base for the Administrator to decide what regulatory action, if any, is necessary, and (C) coordinate

the preparation of reports authorized or required under this part to minimize duplication and insure that the necessary reports are made available in a timely fashion.

#### "REGULATION

"Sec. 153. (a) Not later than January 1, 1978, the Administrator, after considering available reports under section 152, and other available information, and after consulting appropriate agencies and scientific entities, if he then finds that halocarbon emissions from aerosol containers may reasonably be anticipated to cause or contribute to the endangerment of public health or welfare, shall publish proposed regulations which prohibit or restrict the manufacture, sale, import, export, or use of aerosol containers which result in discharge of halocarbons into the atmosphere to the extent necessary to avoid any such endangerment of public health or welfare. Not later than April 1, 1978, and after public hearings, the Administrator shall promulgate and transmit to the Congress final regulations, which shall take effect if not disapproved pursuant to subsection (b) of this section.

"(b) Regulations promulgated under subsection (a) of this section and any amendment or revision thereof shall be transmitted to the Congress. A regulation transmitted under this subsection shall take effect at the end of the first period of ninety calendar days of continuous session of Congress after the date on which the regulation is transmitted to it unless, between the date of transmittal and the end of the ninety-day period, either House passes a resolution disapproving such regulations.

"(c) From time to time after April 1, 1978, the Administrator may revise, promulgate, and submit to the Congress, in accordance with subsection (b) of this section any of the regulations promulgated pursuant to this section in the light of new evidence.

#### "EXPEDITED REGULATION

"Sec. 154. (a) If the Administrator at any time prior to January 1, 1978, finds it necessary to protect the public health or welfare from significant risk of harmful effects which may reasonably be anticipated to arise in whole or in part from halocarbon emissions from aerosol containers, he shall promptly, after public hearings, promulgate regulations which prohibit or restrict the manufacture, production, sale, import, export, or use of aerosol containers discharging halocarbons into the atmosphere. In promulgating such regulations the Administrator shall take into account the public need for such aerosol containers, the costs and feasibility of such action, and all other costs related to depletion of stratospheric ozone.

"(b) To the extent determined essential to protect the public health and welfare pursuant to this section, the Administrator may in the promulgation of regulations pursuant to subsection (a) proceed without regard to such provisions of title 5 of the United States Code, relating to administrative procedure, as he determines necessary.

"(c) From time to time the Administrator may revise any of the regulations issued pursuant to this section in the light of new evidence.

#### "ADDITIONAL REGULATION

"Sec. 155. The Administrator shall—

"(a) consult with appropriate Federal agencies and scientific entities;

"(b) afford an opportunity for public hearing; and

"(c) if he then finds that halocarbons released from sources other than aerosol containers may reasonably be anticipated to cause or contribute to the endangerment of the public health or welfare, publish not later than April 1, 1978, proposed regulations for the control of these emissions. Such regulations shall restrict the manufacture, sale, import, export, or use of such sources to the extent necessary to avoid such endangerment of public health or welfare, and shall include limitations on emissions from such sources to the maximum extent feasible, taking into account the cost of achieving such limitations and all other costs related to the depletion of stratospheric ozone. The Administrator shall take into consideration the findings of other Federal agencies conducting research on stratospheric ozone pertaining to the public health and welfare, and available reports prepared pursuant to section 152. Regulations proposed under this section shall be promulgated in final form within ninety days. From time to time the Administrator may revise any of the regulations issued under this section in the light of new evidence.

#### "PENALTIES

"SEC. 156. (a) It shall be unlawful for any person to violate any provision of regulations pursuant to section 153, 154, or 155 of this Act.

"(b) (1) The Administrator shall commence a civil action in the United States district court in the judicial district in which the person alleged to be engaged in conduct prohibited by regulations under section 153, 154, or 155 of this Act is located or conducts business, for appropriate relief, including a temporary restraining order or a preliminary or permanent injunction to restrain any such conduct.

"(2) Any person engaged in conduct prohibited by regulations under section 153, 154, or 155 of this Act, other than use of aerosol containers by an ultimate consumer, shall be subject to a civil penalty of not more than \$10,000 per day of violation.

#### "INTERNATIONAL COOPERATION

"SEC. 157. The President shall undertake to enter into international agreements to foster cooperative research which complements studies and research authorized by this part, and to develop standards and regulations which protect the stratosphere consistent with regulations under sections 153, 154, and 155 of this Act. For these purposes the President through the Secretary of State and the Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs, shall negotiate multilateral treaties, conventions, resolutions, or other agreements, and formulate, present, or support proposals at the United Nations and other appropriate international forums and shall report to the Congress periodically on efforts to arrive at such agreements. Research agreements shall be developed in accordance with section 8 of Public Law 94-39, and other existing legislation.

#### "STATE AUTHORITY

"SEC. 158. Nothing in this part shall preclude or deny the right of any State or political subdivision thereof to adopt or enforce any regulation controlling the manufacture, sale, or use of halocarbons except that if any regulation is in effect under this part such State or political subdivision may not adopt or enforce any regulation which is less stringent than the regulation under this part.

#### "AUTHORIZATION OF APPROPRIATIONS

"SEC. 159. For the purpose of carrying out the provisions of this part there are authorized to be appropriated—

"(i) to the National Aeronautics and Space Administration, the National Science Foundation, and the Department of State, such sums as may be necessary for the fiscal year ending June 30, 1976, the transition quarter ending September 30, 1976, and the fiscal year ending September 30, 1977; and

"(ii) to all other agencies such sums as may be necessary."

(b) Title I of the Clean Air Act is amended by inserting immediately before section 101 the following:

#### "PART A—AIR QUALITY AND EMISSION LIMITATIONS"

SEC. 17. (a) Section 202(a) of the Clean Air Act is amended by adding a new paragraph (3) as follows:

"(3) The regulations under paragraph (1) of this subsection applicable to emissions of carbon monoxide, hydrocarbons, particulates, and oxides of nitrogen from heavy duty trucks, buses, and motorcycles and engines thereof manufactured in model years (A) 1979 and 1980 (and, if appropriate in the judgment of the Administrator, 1978) shall contain standards which require a reduction of emissions of such pollutants established by the application of the best available control technology taking into account the cost of compliance, as determined by the Administrator, and (B) 1981 and thereafter shall contain standards requiring a reduction of emissions of such pollutants equivalent to the levels required by the standards established under subsection (b) of this section, except that for heavy duty motor vehicles over 10,000 pounds and engines thereof such standards shall constitute a reduction from uncontrolled levels of emissions of carbon monoxide, hydrocarbons, and oxides of nitrogen as actually measured from gasoline powered heavy duty motor vehicles over 10,000 pounds and engines thereof equivalent to the percentage reduction required for light duty motor vehicles in model year 1980 compared to the appropriate model year 1970 base or, for oxides

of nitrogen, model year 1971 base (unless the Administrator finds and reports to the Congress that the control technology is not available or has not been available for a sufficient period of time to achieve compliance on any class of heavy duty vehicle or engine thereof and establishes standards which are based on the best available control technology and which constitute a reduction from any standards which apply in model years 1978 through 1980). The Administrator may, where appropriate, divide vehicles and engines thereof regulated under this paragraph into classes by size, weight, horsepower, and use patterns."

(b) Section 206(a)(1) of the Clean Air Act is amended by inserting "(A)" after "(1)" and by adding at the end thereof the following:

"(B) In the case of heavy-duty motor vehicles, the Administrator may perform, or require to be performed, the tests provided under subparagraph (A) of this paragraph on heavy-duty motor vehicle engines for application in a range of vehicle configuration and use patterns."

SEC. 18. Subparagraph (A) of paragraph (1) of section 202(b) of the Clean Air Act is amended by striking the term "1977", and inserting in lieu thereof "1979"; by striking the phrase "and 1976" after the term "1975" where it first appears, and inserting in lieu thereof "1976, 1977, and 1978".

SEC. 19. Subparagraph (B) of paragraph (1) of section 202(b) of the Clean Air Act is amended to read as follows:

"(B) The regulations under subsection (a) applicable to emissions of oxides of nitrogen from light duty vehicles and engines manufactured during (i) model year 1976 shall contain standards which provide that such emissions from such vehicles and engines may not exceed 3.1 grams per vehicle mile, (ii) (subject to the provisions of paragraph (5) of this subsection) model years 1977, 1978, and 1979 shall contain standards which provide that such emissions from such vehicles and engines may not exceed 2.0 grams per vehicle mile, and (iii) model year 1980 and thereafter shall contain standards which provide that such emissions from such vehicles and engines may not exceed 1.0 gram per vehicle mile."

SEC. 20. Section 202(b)(5) of the Clean Air Act is amended to read as follows:

"(5) The Administrator shall promulgate regulations requiring each manufacturer whose sales represent more than 3 percentum of total light duty motor vehicle unit sales in the world to comply during model year 1979 with the emission standards required under paragraph (1) of this subsection for model year 1980 on 10 per centum of the manufacturer's projected total sales in model year 1979, as determined by the Administrator. Such regulations shall provide that no more than 90 per centum of such manufacturer's projected total sales of light duty motor vehicles in model year 1979 may be sold in compliance with the emission standards otherwise required under paragraph (1) of this subsection for model year 1979."

SEC. 21. Section 202(b) of the Clean Air Act is amended by adding a new paragraph (6) as follows:

"(6) The Congress hereby declares and establishes as a research objective, the development of propulsion systems and emission control technology to achieve standards which represent a reduction of at least 90 per centum from the average emissions of oxides of nitrogen actually measured from light duty motor vehicles manufactured in model year 1971 not subject to any Federal or State emission standard for oxides of nitrogen. The Administrator shall, by regulations promulgated within one hundred and eighty days after enactment of the Clean Air Amendments of 1976 require each manufacturer whose sales represent at least 0.5 per centum of light duty motor vehicle sales in the United States, to build and, on a regular basis, demonstrate the operation of light duty motor vehicles that meet this research objective, in addition to any other applicable standards or requirements for other pollutants under this Act. Such demonstration vehicles shall be submitted to the Administrator no later than model year 1978 and in each model year thereafter. Such demonstration shall, in accordance with applicable regulations, to the greatest extent possible, (A) be designed to encourage the development of new powerplant and emission control technologies that are fuel efficient, (B) assure that the demonstration vehicles are or could reasonably be expected to be within the productive capability of the manufacturers, and (C) assure the utilization of optimum engine, fuel, and emission control systems."

SEC. 22. Section 202(c)(1) of the Clean Air Act is amended to read as follows:

"(c)(1) The Administrator shall undertake to enter into appropriate arrangements with the National Academy of Sciences to conduct continuing comprehensive studies and investigations of the effects on public health and welfare of emissions subject to subsection (a) of this section (including sulfur

compounds) and the technological feasibility of meeting emission standards required to be prescribed by the Administrator by subsection (b) of this section. The Administrator shall report to the Congress within six months of the date of enactment of this paragraph and each year thereafter regarding the status of the contractual arrangements and conditions necessary to implement this paragraph."

SEC. 23. Section 202(d) of the Clean Air Act is amended by amending paragraph (2) to read as follows:

"(2) in the case of any motorcycle or any other motor vehicle or motor vehicle engine not included in paragraph (1), be a period of use the Administrator shall determine."

SEC. 24. (a) Section 203(a) of the Clean Air Act is amended by inserting "(A)" after "(3)" and by adding a new subparagraph (B) at the end of paragraph (3) as follows:

"(B) for any person engaged in the business of repairing, servicing, selling, leasing, or trading motor vehicles or motor vehicle engines, or who operates a fleet of motor vehicles, knowingly to remove or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine in compliance with regulations under this title following its sale and delivery to the ultimate purchaser, or".

(b) Section 205 of the Clean Air Act is amended to read as follows:

"SEC. 205. Any person who violates paragraph (1), (2), or (4) of section 203(a) or any manufacturer who violates paragraph (3) of section 203(a) shall be subject to a civil penalty of not more than \$10,000. Any person who violates paragraph (3) of section 203(a) shall be subject to a civil penalty of not more than \$2,500. Any such violation with respect to paragraph (1), (2), (3), or (4) of section 203(a) shall constitute a separate offense with respect to each motor vehicle or motor vehicle engine."

SEC. 25. Section 203(a) (4) of the Clean Air Act is amended by striking "or" at the end of subparagraph (A), by striking the period at the end of subparagraph (B) and inserting ", or" in lieu thereof, and by adding a new subparagraph (C) as follows:

"(C) except as provided in subsection (c) (3) of section 207, to provide directly or indirectly in any communication to the ultimate purchaser or any subsequent purchaser that the coverage of any warranty under this Act is conditioned upon use of any part, component, or system manufactured by such manufacturer or any person acting for such manufacturer or under his control, or conditioned upon service performed by any such person."

SEC. 26. (a) Section 206(b) (1) of the Clean Air Act is amended by inserting "(A)" after "(b) (1)" and adding a new subparagraph (B) at the end of such subparagraph as follows:

"(B) The Administrator shall within six months of the date of enactment of this subparagraph establish a test procedure to implement, beginning no later than model year 1977, the authority of subparagraph (A) of this paragraph."

(b) Section 206(a) of the Clean Air Act is amended by adding the following new paragraph:

"(3) Each new motor vehicle or new motor vehicle engine shall be certified to conform to the regulations prescribed under section 202 of this Act for the particular vehicle configuration, anticipated use pattern, and equipment of such vehicle or engine. The Administrator shall certify each vehicle or engine with an allowance to assure conformity with such regulations for air-conditioning or similar equipment to be subsequently installed. Such vehicle or engine shall be deemed to be covered by a certificate of conformity only if no equipment is added or other modification made which is not within the allowance provided for in this paragraph."

SEC. 27. Section 207(a) (1) of the Clean Air Act is amended by adding the following new sentences at the end thereof: "The cost of any part, device, or component of any light-duty vehicle that is designed for emission control and which in the instructions issued pursuant to subsection (c) (3) of this section is scheduled for placement during the useful life of the vehicle in order to maintain compliance with regulations under section 202 of this Act, the failure of which shall not interfere with the normal performance of the vehicle, and the expected retail price of which, including installation costs, is greater than 2 per centum of the suggested retail price of such vehicle, shall be borne or reimburse at the time of replacement by the vehicle manufacturer and shall be provided without cost to the ultimate purchaser, subsequent purchaser, or dealer. The term 'designated for mission control' as used herein means a catalytic converter, thermal

reactor, or other component installed on or in a vehicle for the sole or primary purpose of reducing vehicle emissions. It is not intended to include those vehicle components which were in general use prior to model year 1968 and the primary function of which is not related to emission control".

SEC. 28. (a) Section 207(a) of the Clean Air Act is amended by inserting "(1)" after "(a)" and by adding the following new paragraph at the end thereof:

"(2) In the case of a motor vehicle part or motor vehicle engine part, the manufacturer of such part may certify that use of such part will not result in a failure of the vehicle or engine to comply with emission standards promulgated under section 202 of this Act. Such certification shall be made only under such regulations as may be promulgated by the Administrator to carry out the purposes of subsection (b). The Administrator shall promulgate such regulations no later than one year after the date of the enactment of this paragraph. Before the effective date of such regulations all parts shall be deemed to have such certification."

(b) Section 207(b)(2) of such Act is amended by adding the following at the end thereof: "No such warranty shall be invalid on the basis of any part used in the maintenance or repair of a vehicle or engine if such part was certified as provided under subsection (a)(2) of this section, shall any such warranty be invalid on the basis of the installation or use of any air-conditioning system not installed in the factory of the vehicle manufacturer, where the particular vehicle or engine in which such air-conditioning system is installed is certified in accordance with section 206(a)(3) with an allowance for air-conditioning or similar equipment to be subsequently installed."

SEC. 29. Paragraph (3) of subsection (c) of section 207 of the Clean Air Act is amended to read as follows:

"(3) (A) The manufacturer shall furnish with each new motor vehicle or motor vehicle engine written instructions for the proper maintenance and use of the vehicle or engine by the ultimate purchaser and such instructions shall correspond to regulations which the Administrator shall promulgate.

"(B) The instruction under subparagraph (A) of this paragraph shall not include any condition on the ultimate purchaser's using, in connection with such vehicle or engine, any component or service (other than a component or service provided without charge under the terms of the purchase agreement) which is identified by brand, trade, or corporate name; or directly or indirectly distinguishing between service performed by the franchised dealers of such manufacturer or any other service establishments with which such manufacturer has a commercial relationship, and service performed by independent automotive repair facilities with which such manufacturer has no commercial relationship; except that the prohibition of this subsection may be waived by the Administrator if—

"(i) the manufacturer satisfies the Administrator that the vehicle or engine will function properly only if the component or service so identified is used in connection with such vehicle or engine, and

"(ii) the Administrator finds that such a waiver is in the public interest.

"(C) In addition, the manufacturer shall indicate by means of a label or tag permanently affixed to such vehicle or engine that such vehicle or engine is covered by a certificate of conformity issued for the purpose of assuring achievement of emissions standards prescribed under section 202 of this Act. Such label or tag shall contain such other information relating to control of motor vehicle emissions as the Administrator shall prescribe by regulation."

SEC. 30. Section 207 of the Clean Air Act is amended by adding the following new subsection:

"(g) For the purposes of this section, the owner of any motor vehicle or motor vehicle engine warranted under this section is responsible in the proper maintenance of such vehicle or engine to replace and to maintain, at his expense at any service establishment or facility of his choosing, such items as spark plugs, points, condensers, and any other part, item, or device related to emission control (but not designed for emission control under the terms of the last three sentences of section 207(a)(1)) that has a design life of less than the useful life of such vehicle or engine, unless such part, item, or device is covered by any warranty not mandated by this Act or unless such part fails prior to its design life."

SEC. 31. Section 209 of the Clean Air Act is amended by adding the following new subsection:

"(d) Notwithstanding subsection (a) of this section, any State in which a region or portion thereof has been identified pursuant to section 107(b)(1)(A) of this Act may adopt and enforce for model year 1979 the emission standards for

light duty motor vehicles required for model year 1980 under section 202(b) (1) of this Act: *Provided*, That the State shows to the satisfaction of the Administrator that the adoption of the standard in 1979 is required to achieve any ambient air quality standard by 1982 and maintain thereafter. Light duty motor vehicles offered for sale within such State shall be certified to comply with such standards in accordance with the procedures established under section 206 of this Act."

SEC. 32. Section 211 of the Clean Air Act is amended by adding a new subsection (e) as follows:

"(e) The Administrator shall conduct a study and report to Congress by July 1, 1977, on the emission of sulfur-bearing compounds from motor vehicles and motor vehicle engines and aircraft engines. Such study and report shall include but not be limited to a review of the effects of such emissions on public health and welfare and an analysis of the costs and benefits of alternatives to reduce or eliminate such emissions (including desulfurization of fuel, short-term allocation of low sulfur crude oil, technological devices used in conjunction with current engine technologies, alternative engine technologies, and other methods) as may be required to achieve any proposed or promulgated emission standards for sulfur compounds."

SEC. 33. (a) Title II of the Clean Air Act is amended by adding at the end thereof the following new part:

#### "PART C—RAILROAD LOCOMOTIVE EMISSION STANDARDS

"SEC. 235. (a) (1) Within ninety days after the date of enactment of the Clean Air Amendments of 1976, the Administrator shall commence a study and investigation of emissions of air pollutants from railroad locomotives, locomotive engines, and secondary power sources on railroad rolling stock, in order to determine—

"(A) the extent to which such emissions affect air quality in air quality control regions throughout the United States, and

"(B) the technological feasibility of controlling such emissions.

"(2) (A) Within one hundred and eighty days after commencing such study and investigation, the Administrator shall publish a report of such study and investigation and shall publish proposed emission regulations applicable to emissions of any air pollutant from any class or classes of locomotives, locomotive engines and secondary power sources on railroad rolling stock, which in his judgment cause or contribute to or are likely to cause or contribute to air pollution which endangers the public health or welfare.

"(B) such proposed regulations shall include emission standards setting limits on air pollutant emissions which reflect the degree of emission reduction achievable through the application of the best available technology, taking into account the cost of compliance, as determined by the Administrator. Such regulations may identify the type of technology available to achieve such reduction.

"(3) The Administrator shall hold public hearings with respect to such proposed regulations. Within ninety days after the issuance of such proposed regulations, he shall issue such regulations with such modifications as he deems appropriate. Such regulations may be revised from time to time.

"(b) Any regulation prescribed under this section (and any revision thereof) shall take effect after such period as the Administrator finds necessary (after consultation with the Secretary of Transportation) to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period.

"(c) Any regulations under this section, or amendments thereto, with respect to locomotives, locomotive engines, and secondary power sources on railroad rolling stock, shall be prescribed only after consultation with the Secretary of Transportation in order to assure appropriate consideration for safety.

"SEC. 236. The Secretary of Transportation, after consultation with the Administrator, shall prescribe regulations to insure compliance with all standards prescribed under section 235 by the Administrator. Such Secretary shall insure that all necessary inspections are accomplished and may execute any power or duty vested in him by any other provisions of law in the execution of all powers and duties vested in him under this section.

"SEC. 237. After the effective date of regulation under section 235 of this Act no State or political subdivision thereof may adopt or enforce any standard respecting emissions of any air pollutant from any railroad locomotives, locomotive

tive engines, or secondary power sources on railroad rolling stock, unless such standard is identical to a standard applicable to emission prescribed by any regulation under this part.”.

(b) Section 116 of the Clean Air Act is amended by striking out “and 233” and inserting in lieu thereof “233 and 237”.

SEC. 34. (a) Section 302 of the Clean Air Act is amended by adding five new subsections as follows:

“(i) The term ‘emission limitation’ means a requirement established by a State or the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including a detailed schedule and timetable of compliance.

“(j) The term ‘schedule and timetable of compliance’ means a schedule of remedial measures including an enforceable sequence of actions or operations leading to compliance with an emission limitation, other limitation, prohibition, or standard.

“(k) The term ‘major emitting facility’ means any stationary source of air pollutants which emits, or has the potential to emit, 100 tons per year or more of any air pollutant, except that for the purposes of section 110(g) of this Act, the term is limited to the following types of such stationary sources: fossil-fuel fire steam electric plants or more than 250 million British thermal units per hour heat input, coal cleaning plants (thermal dryers), kraft pulp mills, Portland Cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production facilities, chemical process plants, fossil-fuel boilers of more than 250 million British thermal units per hour heat input, petroleum storage and transfer facilities with a capacity exceeding 300,000 barrels, taconite ore processing facilities, glass fiber processing plants, charcoal production facilities, and such other major emitting facilities as the Administrator determines to be significant potential sources of air pollutants.

“(l) The term ‘baseline air quality concentration’ refers to the ambient concentration levels which exist at the time of the first application for a permit in an area under section 110(g) of this Act, based on air quality data available in the Environmental Protection Agency or an air pollution control agency and such monitoring data as the permitting authority may require the permit applicant to submit. Such ambient concentration levels shall take into account all projected emissions in, or which may affect, such area from any major emitting facility on which construction commenced prior to January 6, 1975, but which has not begun operation by the date of the baseline air quality concentration determination. Emissions of sulfur oxides and particulate matter from any major emitting facility on which construction commenced after January 6, 1975, shall be accounted against the limitations on projected increases in pollutant concentrations established in paragraphs (2) and (5) of section 110(g) of this Act.

“(m) The term ‘stationary source’ shall have the same meaning as such term has under section 111(a) (3) of this Act.”.

(b) Section 302(d) of the Clean Air Act is amended—

(1) by striking out the word “and” immediately preceding “American Samoa”:

(2) by striking the period immediately following “American Samoa” and inserting in lieu thereof “, and the Trust Territory of the Pacific Islands.”.

SEC. 35. (a) Section 304(a) of the Clean Air Act is amended—

(1) by striking out the period at the end of paragraph (2) and inserting in lieu thereof “, or”; and

(2) by inserting immediately after paragraph (2) the following new paragraph):

“(3) against any person who proposes to construct or constructs any new major emitting facility without a permit required under section 110(g) of this Act or who is alleged to be in violation of any condition of such permit.”.

(b) Section 304(f) of the Clean Air Act is amended by inserting “requirement,” after “a” in paragraph (1).

SEC. 36. Section 307 of the Clean Air Act is amended by adding a new subsection as follows:

“(d) In any judicial proceeding under this Act in which the United States or an officer or employee thereof is a party (other than as an intervenor), any party

other than the United States which prevails in such action shall recover from the United States the reasonable costs for such party's participation in such proceeding, including reasonable attorney's fees, expert witness fees, and the costs of any studies, analyses, tests, or engineering reports that the court finds were necessary to litigate such action. In any case in which such party prevails in part, the court shall have discretion to award such reasonable costs."

SEC. 37. (a) The Clean Air Act is amended by inserting a new section 314 as follows after section 313 and renumbering succeeding sections accordingly:

#### "EMPLOYEE PROTECTION

"Sec. 314. (a) No person shall fire, or in any other way discriminate against, or cause to be fired or discriminated against any employee or any authorized representative of employees by reason of the fact that such employee or representative has filed, instituted, or caused to be filed or instituted any proceeding under this Act or under any applicable implementation plan, or has testified or is about to testify in any proceeding resulting from the administration or enforcement of the provisions of this Act or of any applicable implementation plan.

"(b) Any employee or a representative of employees who believes that he has been fired or otherwise discriminated against by any person in violation of subsection (a) of this section may, within thirty days after such alleged violation occurs, apply to the Secretary of labor for a review of such firing or alleged discrimination. A copy of the application shall be sent to such person who shall be the respondent. Upon receipt of such application, the Secretary of Labor shall cause such investigation to be made as he deems appropriate. Such investigation shall provide an opportunity for a public hearing at the request of any party to such review to enable the parties to present information relating to such alleged violation. The parties shall be given written notice of the time and place of the hearing at least five days prior to the hearing. Any such hearing shall be of record and shall be subject to section 554 of title 5 of the United States Code. Upon receiving the report of such investigation, the Secretary of labor shall make findings of fact. If he finds that such violation did occur, he shall issue a decision, incorporating an order therein and his findings, requiring the party committing such violation to take such affirmative action to abate the violation as the Secretary of labor deems appropriate, including, but not limited to, the rehiring or reinstatement of the employee or representative of employees to his former position with compensation. If he finds that there was no such violation, he shall issue an order denying the application. Such order issued by the Secretary of labor under this subparagraph shall be subject to judicial review in the same manner as orders and decisions of the Administrator are subject to judicial review under this Act.

"(c) Whenever an order is issued under this section to abate such violation, at the request of the applicant, a sum equal to the aggregate amount of all costs and expenses (including the attorney's fees) as determined by the Secretary of Labor, to have been reasonably incurred by the applicant for, or in connection with, the institution and prosecution of such proceedings, shall be assessed against the person committing such violation.

"(d) This section shall have no application to any employee who, acting without direction from his employer (or his agent) deliberately violates any requirement of an applicable implementation plan approved or promulgated under section 110 of this Act, a new source performance standard under section 111 of this Act, a standard for hazardous emissions under section 112 of this Act, any requirement relating to inspections under section 114 of this Act, or any other prohibition or limitation established under this Act.

"(e) The Administrator shall conduct continuing evaluations of potential loss or shifts of employment which may result from the administration or enforcement of the provision of this Act and applicable implementation plans, including where appropriate, investigating threatened plant closures or reductions in employment allegedly resulting from such administration or enforcement. Any employee who is discharged, or laid off, threatened with discharge or layoff, or otherwise discriminated against by any person because of the alleged results of such administration or enforcement, or any representative of such employee, may request the Administrator to conduct a full investigation of the matter. The Administrator shall thereupon investigate the matter and, at the request of any party, shall hold public hearings on not less than five days' notice, and shall at such hearings require the parties, including the employer involved, to present information relating to the actual or potential effect of such administration or

enforcement on employment and on any alleged discharge, layoff, or other discrimination and the detailed reasons or justification therefor. Any such hearing shall be of record and shall be subject to section 554 of title 5 of the United States Code. Upon receiving the report of such investigation, the Administrator shall make findings of fact as to the effect of such administration or enforcement on employment and on the alleged discharge, layoff, or discrimination and shall make such recommendations as he deems appropriate. Such report, findings and recommendations shall be available to the public. Nothing in this subsection shall be construed to require or authorize the Administrator or any State to modify or withdraw any standard, limitation, or any other requirement of this Act or any applicable implementation plan."

(b) Section 114 of the Clean Air Act is amended:

(1) To amend paragraph (iii) of subsection 114(a) to read as follows:

"(iii) carrying out section 119, 303, or 314."

(2) To amend paragraph (2) of subsection 114(a) to strike the "and" at the end of section 114(a) (2) (A); to change the period at the end of section 114(a) (2) (B) to a comma; and inserting the following:

"and (C) may at reasonable times have access to and copy any employer's records relating to matters being investigated pursuant to section 314."

SEC. 38. The Clean Air Act is amended by inserting a new section 315 as follows after new section 314 and renumbering succeeding sections accordingly:

#### "NATIONAL COMMISSION ON AIR QUALITY

"SEC. 315. (a) There is established a National Commission on Air Quality which shall study and report to the Congress on—

"(1) the economic, technological, and environmental consequences of achieving or not achieving the purposes of this Act and programs authorized by it;

"(2) available alternatives, including enforcement mechanisms to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and to achieve the other purposes of the Act, including achievement and maintenance of national ambient air quality standards and in accordance with subsection (i) of this section the prevention of significant deterioration of air quality;

"(3) the technological capability of achieving and the economic, energy, and environmental impacts of achieving or not achieving required emission control levels for mobile sources of oxides of nitrogen (including the research objective of 0.4 gram per vehicle mile) in relation to and independent of regulation of emissions of oxides of nitrogen from stationary sources;

"(4) air pollutants not presently regulated, which pose or may in the future pose a threat to public health or public welfare and options available to regulate emissions of such pollutants;

"(5) the adequacy of research, development, and demonstrations being carried out by Federal, State, local, and nongovernmental entities to protect and enhance air quality;

"(6) the ability of (including financial resources, manpower, and statutory authority) Federal, State, and local institutions to implement the purposes of the Act;

"(7) the extent to which the reduction of hydrocarbon emissions is an adequate or appropriate method to achieve primary standards for photochemical oxidants. Such study shall include—

"(A) a description and analysis of the various pollutants which are commonly referred to as 'photochemical oxidants' or chemical precursors to photochemical oxidants;

"(B) an analysis of any pollutants or combination of pollutants which need to be reduced to achieve any photochemical oxidant standard, and the amount of such reduction;

"(C) the relationship between the reductions of hydrocarbons, oxides of nitrogen, and any other pollutants and the achievement of applicable standards for photochemical oxidants;

"(D) the degree to which background or natural sources and long-range transportation of pollutants contribute to measured ambient levels of photochemical oxidants;

"(E) any other oxidant-related issues which the Commission determines to be appropriate;

"(8) alternative strategies for permitting, without impeding the achievement of national ambient air quality standards as expeditiously as possible, the con-

struction of new facilities and the modification of existing facilities in air quality control regions exceeding the national ambient air quality standard for any pollutant regulated under the Act.

"(b) Such Commission shall be appointed within sixty days after enactment of this section and shall be composed of sixteen members, including the chairman and the ranking minority Member of the Senate Committee on Public Works and the House Committee on Interstate and Foreign Commerce, who shall serve on such Commission *ex officio* and without vote, and twelve members of the public appointed by the President. Such Commission shall include four State Governors, who may designate the chief administrative officer of the State's air pollution control agency. The Chairman of such Commission shall be elected from among its members.

"(c) The heads of the departments, agencies, and instrumentalities of the executive branch of the Federal Government shall cooperate with the Commission in carrying out the requirements of this section, and shall furnish to the Commission such information as the Commission deems necessary to carry out this section.

"(d) A report, together with any appropriate recommendations, shall be submitted to the Congress on the results of the investigation and study concerning section (a) (3) of this section no later than March 1, 1977, in order that Congress may have this information in a timely fashion if it deems further changes are needed in the requirements for control of emissions of oxides of nitrogen under this Act.

"(e) (1) Except as provided in paragraph (2) of this subsection, a report shall be submitted with regard to all other Commission studies and investigations, together with any appropriate recommendations, not later than three years after the date of enactment of this section.

"(2) A report on the results of the study and investigation of the Commission authorized, under subsection (i) of this section, together with any appropriate recommendations, shall be submitted not later than two years after the date of enactment of this section.

"(3) A report on the results of the study and investigation of the Commission authorized under subsection (a) (7) of this section, together with any appropriate recommendations, shall be submitted not later than two years after the date of enactment of this section. During the preparation of this specific study and report, the Commission shall seek the participation and consultation of the Chairman of the Council on Environmental Quality; the Administrator of the National Oceanic and Atmospheric Administration; the Administrator of the Environmental Protection Agency; and Governors of those States having air quality control regions in which primary ambient air quality standards for photochemical oxidants are exceeded at the time of enactment of these amendments or are projected to be exceeded within the period of the study, or the chief administrative officers of their State air pollution control agencies designated by any State Governor. The Commission may contract with nonprofit technical and scientific organizations, including the National Academy of Sciences, for the purpose of developing necessary technical information for the study authorized by subsection (a) (7) of this section.

"(f) The members of the Commission who are not officers or employees of the United States, while attending conferences or meetings of the Commission or while otherwise serving at the request of the Chairman shall be entitled to receive compensation at a rate not in excess of the maximum rate of pay for grade GS-18, as provided in the General Schedule under section 5332 of title V of the United States Code, including traveltime and while away from their homes or regular places of business they may be allowed travel expenses, including per diem in lieu of subsistence as authorized by law (5 U.S.C. 73b-2) for persons in the Government service employed intermittently.

"(g) There is authorized to be appropriated, for use in carrying out this section, not to exceed \$17,000,000.

"(h) In the conduct of the study, the Commission is authorized to contract with nongovernmental entities that are competent to perform research or investigations in areas within the Commission's mandate, and to hold public hearings, forums, and workshops to enable full public participation.

"(i) (1) The Commission shall, in carrying out the study authorized under this section, give priority to a study of the implementation of the provisions of subsection (g) of section 110 of this Act.

"(2) In carrying out the authority of this subsection the Commission shall study, among others, the following:

"(A) whether the provisions relating to the designation of, and protection of air quality in class I regions under this Act are appropriate to protect the air quality over lands of special national significance, including recommendations for, and methods to (i) add to or delete lands from such designation, and (ii) provide appropriate protection of the air quality over such lands;

"(B) whether the provisions of subsection (g) of section 110 of this Act, including the three-hour and twenty-four-hour increments, (i) affect the location and size of major emitting facilities, and (ii) whether such effects are in conflict or consonance with other national policies regarding the development of such facilities;

"(C) whether the technology is available to control emissions from the major emitting facilities which are subject to regulation under subsection (g) of section 110 of this Act, including an analysis of the cost associated with that technology.

"(D) whether the exclusion of nonmajor emitting sources from the regulatory framework under this Act will affect the protection of air quality in class I and class II regions designated under this Act;

"(E) whether the increments of change of air quality under this Act are appropriate to prevent significant deterioration of air quality in class I and class II regions designated under this Act; and

"(F) whether the choice of predictive air quality models and the assumptions of those models are appropriate to protect air quality in the class I and class II regions designated under this Act for the pollutants subject to regulation under subsection (g) of section 110 of this Act.

"(3) For the study authorized under this subsection there shall be made available by contract to the Commission from the appropriation to the Environmental Protection Agency for fiscal year 1977 the sum of \$1,000,000."

Such study shall be undertaken primarily by the Bureau of Competition in consultation with the Bureau of Consumer Affairs, the Department of Justice, and the Environmental Protection Agency. The report of such study shall be submitted to the Committee on Public Works of the Senate and the Committee on Interstate and Foreign Commerce of the House of Representatives no later than eighteen months after the enactment of the Clean Air Amendments of 1976.

SEC. 41. The Congress finds that emissions of oxides of nitrogen are projected to increase dramatically in coming years and that inadequate controls are currently projected for stationary sources of oxides of nitrogen, and directs the Administrator to study and report to the Congress within one year on the possible creation of a system of penalties on emissions of oxides of nitrogen. Such penalties shall be designed for new major emitting facilities, or existing major emitting facilities, or both, to encourage the development of more effective systems and technologies for control of emissions of oxides of nitrogen. Any proposed penalty system recommended by the Administrator should be planned to terminate, for each category of facilities, at such time as the Administrator is satisfied that adequate technology exists and is available to control oxides of nitrogen to the greatest extent practicable for that category of facilities, and that such controls are being, or will be, installed on all such facilities. As a part of such report, the Administrator shall also recommend a system by which major emitting facilities would be required to compile records to determine any such emission penalty that would be due.

SEC. 42. (a) No suit, action, or other proceeding lawfully commenced by or against the Administrator or any other officer or employee of the United States in his official capacity or in relation to the discharge of his official duties under the Clean Air Act, as amended, as in effect immediately prior to the date of enactment of this Act shall abate by reason of the taking effect of the amendments made by this Act. The court may, on its own motion or that of any party made at any time within twelve months after such taking effect, allow the same to be maintained by or against the Administrator or such officer or employee.

(b) All rules, regulations, orders, determinations, contracts, certifications, authorizations, delegations, or other actions duly issued, made, or taken by or pursuant to the Clean Air Act, as amended, as in effect immediately prior to the date of enactment of this Act, and pertaining to any functions, powers, requirements, and duties under the Clean Air Act, as amended, as in effect immediately prior to the date of enactment of this Act, and not suspended by the Administrator or the courts, shall continue in full force and effect after the date of enactment of this Act until modified or rescinded in accordance with the Clean Air Act as amended by this Act.

(c) Nothing in this Act nor any action taken pursuant to this Act shall in any way affect any requirement of an approved implementation plan in effect under section 110 of this Act or any other provision of the Act in effect under the Clean Air Act before the date of enactment of this section until modified or rescinded in accordance with the Clean Air Act as amended by this Act.

SEC. 43. This Act may be cited as the "Clean Air Amendments of 1976".

## MAJOR AMENDMENTS PROPOSED TO S. 3219

### THE AIR RESEARCH AND TRAINING PROGRAMS, CLEAN AIR ACT AMENDMENTS

Mr. BENTSEN. I had originally intended to offer an amendment to insure that adequate funding would be provided for two relatively unheralded but nevertheless extremely important programs authorized by the 1970 Clean Air Act. These programs, which help to fund State air research and training efforts, have been of great assistance to a number of State air pollution control agencies during the past 5 years, and I believe a continued commitment of Federal assistance for them is fully warranted.

In 1970, Congress assigned primary responsibility for enforcing the act to the States. They were to devise their own implementation plans for attaining the national air quality standards, and following EPA's approval, they were to enforce them. This year's amendments both clarify and expand those enforcement responsibilities.

As the States have prepared and begun implementation of these plans, many have also initiated research programs into the causes, effects, and possible control of air pollutants. These programs have addressed a variety of problems experienced to date and have advanced the frontiers of knowledge in this area of critical environmental importance. The air control board of my own State of Texas has, for example, initiated pioneering studies on photochemical oxidants.

I remain convinced that we still have a great deal to learn about the causes, effects, and possible controls of air-borne pollutants. State research projects are often geared to problems encountered in local enforcement efforts, and the contribution to our understanding from this State-conducted research is already great. I would hope the Congress would insist that Federal assistance to these State programs be continued.

The amount of Federal money actually provided for the State air research programs of section 103(b) (3) is difficult to determine because it is included within the Agency's overall research program. Apparently, the Agency plans to make approximately \$3,960,000 available for State research programs in each of fiscal years 1976 and 1977. I would hope that the Agency and the Congress make sure that continued funding at least of that magnitude is made available for this important State-directed research.

A second concern of mine is with the training programs authorized by section 103(b) (5) of the act. As the States expand their efforts to bring polluting sources into compliance with the requirements of the law, ever growing amounts of air quality data will have to be gathered and evaluated. While perhaps appearing to be the more routine, day-to-day function of State air control authorities, it is nonetheless absolutely essential to an effective abatement program. Without this

work, the enforcement authority would have no accurate means for determining whether a source is actually attaining the requisite emission limitation, nor would it have a sufficient factual base to take a violating source to court.

The personnel who actually collect the air samples, analyze them, and report their findings thus play a crucial role in any enforcement program. The work they do must be performed with care and precision, and they must get their start with adequate training.

Currently, EPA conducts periodic training seminars, and some States have also initiated their own programs. As we increase the enforcement responsibilities of the States, I believe we should also assist them in developing the capabilities to meet them.

Unfortunately, the administration during the past several years has not seen fit to assign much importance to this direct training program. Apparently at OMB's insistence, the President's request for training grant money was reduced by more than half between fiscal years 1973 and 1976. This year, not a cent was requested.

We are not discussing vast sums for these programs, as the data in the table appearing at the conclusion of my remarks attests. Fortunately, the Appropriations Committees have each of the past 2 years called a halt to this erosion of administration support of the training effort. This year, both Houses have included \$1 million in training grant money.

I had seriously considered proposing an amendment to insure minimum funding for both the State research and training programs. I have decided not to offer it at this time primarily because of the continuing support given them by the Appropriations Committees, I would hope and urge that OMB and the Agency will more favorably view the importance of these two programs.

I ask that a table showing air training grants be printed in the Record.

*Air training grants, authorized by section 103(b)(5) of the Clean Air Act*

Fiscal year:	President's request	Actual appropriation
1977-----		\$1, 000, 000
1976-----	\$1, 100, 000	1, 900, 000
1975-----	1, 700, 000	1, 700, 000
1974-----	2, 100, 000	2, 100, 000
1973-----	2, 563, 000	3, 600, 000

By Mr. CANNON (for himself and Mr. Laxalt) :

S. 2895. A bill to amend the Clean Air Act in order to authorize States to allow certain variances in emission control in isolated areas. Referred to the Committee on Public Works.

Mr. CANNON. I introduce on behalf of myself and Senator Laxalt a bill to amend the Clean Air Act.

This bill provides authority for the States to approve control variances for emission sources through secondary controls such as production cutbacks during adverse weather where two criteria are met. The first condition would mandate that the source must be in an isolated area in which the State can determine that no serious impact on the public health or welfare will occur. The second states there must be

demonstrated severe economic hardship on such source if constant emission controls are required.

An example of the critical situation facing some areas of our country involves the Kennecott operation in Ely and McGill, Nev. The Kennecott smelter is located in an area of less than two persons per square mile. Its present operation meets the State implementation plan.

The plant has added costly equipment in its effort to halt pollutants, and the EPA has approved this addition. However, the EPA not only insists that additional extremely expensive scrubbing equipment be added but that the plant install as yet unknown equipment as it becomes available on the market, regardless of cost. It is obvious that this has placed the plant in a most serious situation, but, more importantly, the EPA now is dictating the future livelihood of the citizens of two of my State's cities.

This additional scrubbing equipment, let alone some future horrendous expenditure, is far beyond the economic feasibility the plant can sustain.

We all support the effort of our Nation to clean and protect the environment. We all must share in this responsibility. But there must be some flexibility in the administration of these efforts. Without some relief, as envisioned in this bill, two cities in Nevada stand to lose the only industry on which their economy is based, despite the fact that the industry meets the air quality standards of the State and is presently operating within the approval of the Environmental Protection Agency. The tragic consequences of that industry's forced shutdown would not only disrupt the lives of these Nevadans and destroy the local economy but it would also belie our commitment to strengthening our economy which affects all of us.

Mr. LAXALT. Mr. President, the senior Senator from the State of Nevada, Mr. Cannon and I are today sponsoring legislation to amend the Clean Air Act. Our bill would authorize States to allow certain variances in emission control systems in isolated areas.

We have a situation in our State where the provisions of the Clean Air Act, if enforced to the letter of the current law could literally, rob one of our smaller cities of its major economic base. The Kennecott Copper Corp. which provides a livelihood for many residents in Ely, Nev., has been required by the Environmental Protection Agency to install expensive air quality control equipment at their plant. Kennecott will cooperate with this regulatory directive. However, the original requirement takes on the nature of the absurd when it is explained that EPA is insisting on the placement of this equipment with the understanding that should this Federal agency judge conditions warrant at some unspecified future date, the company will be required to install additional air quality control mechanisms. This open-ended arrangement is obviously impossible for Kennecott to enter into and retain any hope of continuing a successful operation.

Certainly, people residing in those populous urban areas which suffer from pollution difficulties deserve protection. However, a rural community like Ely—totally isolated from any dense population centers—and not subject to serious impact on the public health, welfare, or environment from Kennecott's operations, should not be singled out for attention under national standards which fail to meet local needs.

The measure Senator Cannon and I are proposing would add a little commonsense and flexibility to the Clean Air Act so areas like Ely can be accommodated without any danger to health, welfare or the environment from pollution. It is way past time for this Congress and our regulatory agencies to be responsive to the needs of all Americans. The only sure way to accomplish that is by working through the States rather than have every bureaucratic promulgation come from on high in Washington where local needs are usually not well known.

94TH CONGRESS  
2D SESSION

# S. 2895

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## IN THE SENATE OF THE UNITED STATES

JANUARY 29, 1976

Mr. CANNON (for himself and Mr. LAXALT) introduced the following bill;  
which was read twice and referred to the Committee on Public Works

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## A BILL

To amend the Clean Air Act in order to authorize States to allow certain variances in emission control systems in isolated areas.

1       *Be it enacted by the Senate and House of Representa-*  
2       *tives of the United States of America in Congress assembled,*  
3       That section 110 (a) (2) of the Clean Air Act is amended  
4       by striking out "and" at the end of clause (G), striking out  
5       the period at the end of clause (H) and inserting in lieu  
6       thereof a semicolon and the word "and", and inserting at the  
7       end thereof a new clause as follows:

8               “(I) it provides for the granting by the State of  
9       variances for emission sources: *Provided*, That an appli-  
10       cation for each such variance is made to the State, and

## 2

1       the State determines in accordance with criteria estab-  
2       lished by the Administrator that—

3               “(i) such source is in an isolated area, will pro-  
4       vide control of emissions with a secondary control  
5       system and during periods of adverse conditions with  
6       a supplementary system so as to avoid any serious  
7       impact on the public health or welfare; and

8               “(ii) complete compliance would cause severe  
9       economic hardship on such source.”.

# AMENDMENT TO THE CLEAN AIR ACT AMENDMENTS BAN ON AEROSOL SPRAY PRODUCTS

Mr. PACKWOOD. I am entering today an amendment to the Clean Air Act amendments that were voted to be reported out of the Committee on Public Works yesterday afternoon. The Clean Air Act amendments contain a specific part dealing with ozone protection, which I and several of our colleagues drafted last fall and had adopted by the Committee on Public Works. However, the specific section legislating a prohibition, or ban, on a date certain for the use of aerosol products containing halocarbons was not added in committee. While there was support for this action, and a number of our colleagues support such an action, I believe we shall need to address this issue before the Senate. Therefore, once the Clean Air Act amendments have been reported to the Chamber, and we commence debate on the bill, I shall offer this amendment to the ozone protection section to ban the manufacture, production, export and import of aerosol products containing halocarbons after January 1, 1978.

I ask that the text of the amendment I intend to offer banning aerosol spray products be printed at this point in the Record.

## AMENDMENT

"SEC. 153. (a) On and after January 1, 1978, except as provided in subsection (b), it shall be unlawful for any person to manufacture, produce, import or export from the United States, aerosol containers containing halocarbons.

"(b) The Administrator shall consider the available reports, consult with appropriate Federal agencies and scientific entities, and afford the opportunity for public hearing, and if he then

"(1) finds that no significant risk to the public health, safety, or welfare is, or may be posed by the discharge of halocarbons into the ambient air from aerosol containers, then he shall, by rule, modify or rescind the prohibition in Sec. 153 (a) in whole or in part consistent with that finding, or

"(2) determines that a particular use of halocarbons in aerosol containers is essential for the public health or welfare and an adequate substitute for halocarbons is not available, he may grant specific permits for the use of small quantities of halocarbons in aerosol containers in such situations. Essential uses may include but are not limited to, some of the various applications of halocarbons in the pharmaceutical and electrical industrial industries.

"(c) From time to time the Administrator may revise any of the regulations issued pursuant to this section in the light of new evidence as to the need for such regulations.

My reason for pursuing an outright ban on aerosol products is based on three specific reasons for this action to be taken now. The first, there is a nearly 10-year lag time between the release of halocarbons and their impact on the ozone layer. Even if a ban were in force today, the deleterious effects due to ozone depletion would continue for a decade; of potential damage we cannot anticipate with certainty.

Second, consider the degree of certainty, often absolute, which some say must be demonstrated before aerosol controls are initiated. Again, let me reiterate the preponderance of evidence which monthly, for the last year, has made the probability of ozone depletion more likely and closer to certain. I question how long we can await proof positive while risking the sizeable, unforeseen impacts to our environment.

Third, I seriously doubt that the consequences of controlling halocarbons as I have proposed imposes any undue or inequitable hardships on the public or industry. On balance, recognizing the great risks we take by waiting longer to restrict the present level of emissions, by

waiting longer for research results that may be years away, and by not realizing the reasonable alternatives to halocarbons propellants now, we may be making a grievous error.

## CLEAN AIR ACT AMENDMENTS OF 1976—S. 3219

### AMENDMENT NO. 1577

Mr. PACKWOOD (for himself, Mr. Bumpers, Mr. McIntyre, Mr. Gary Hart, Mr. Brooke, Mr. Hathaway, Mr. Hatfield, Mr. Abourezk, and Mr. Hollings) submitted an amendment intended to be proposed by them jointly to the bill (S. 3219) to amend the Clean Air Act, as amended.

Mr. PACKWOOD. I submit an amendment to ban the use of aerosol spray containers containing halocarbons [Sec. 150-159] which has the support of a number of my colleagues, and unanimous consumer and environmental support. Since I introduced the Ozone Preservation Act of 1975, I have sought an outright ban on a date specific for the use of aerosol spray containers containing halocarbons. Depletion of the ozone layer, which shields the Earth from carcinogenous ultraviolet radiation, is a very serious problem.

I submit that the problem is a very real and present danger. Within the United States alone, hundreds of thousands of tons of halocarbons are emitted annually from aerosol containers.

The amendment which I am introducing with my colleagues today is not the most radical action which could be taken. Many people have asked that aerosol spray containers be banned tomorrow and the remaining aerosols be collected and destroyed. While I recognize the problem as severe enough to warrant that approach, I believe that we need to seek a reasonable balance which will have the support of the Senate and the blessing of the President.

Therefore, the amendment which I am introducing today will ban aerosol spray containers using halocarbons as of January 1, 1978. Moreover, in the coming months before this ban goes into effect, I expect the aerosol container manufacturers nationwide will have sufficient time to develop the alternatives to the use of halocarbons in aerosol spray products.

As many people have often stated, the danger which is caused by the use of aerosol spray products is not worth the mere convenience which these products provide. Some people will view the issue as we vote on this aerosol ban as convenience versus human and environmental damage. If we were to vote on that argument alone, I am convinced that many of my colleagues would support this amendment.

But, the issue before us as to whether or not we should ban aerosol spray products goes much deeper. I believe there are three critical arguments which can be made to support this amendment, in addition to the growing absolute and thoroughly scientific record that halocarbons are, in fact, depleting the ozone layer.

First, halocarbons take over ten years to rise to the upper layers of the atmosphere, or the stratosphere, where they break down the ozone concentration into simple oxygen molecules. This means that aerosol sprays which were used in 1966, and perhaps earlier, are probably just beginning, and I stress beginning, to have their impact on the

ozone layer. What were the levels of halocarbon production and use 10 years ago?

In 1966, according to the U.S. Tariff Commission's report, the U.S. production of fluorocarbons 11 and 12 was 450 million pounds. Again, that was the level of production and use in 1966. In 1974, the same chemicals were produced in a volume exceeding 850 million pounds, or nearly twice the amount produced in 1966.

Considering the fact that the total production of halocarbons, and their emission into the atmosphere since 1966 has not yet had its full effect on the ozone layer, what is the amount of halocarbons in the atmosphere which will reach the ozone layer? Considering that 50 percent of all halocarbons produced in the United States are used in aerosol packaging, and that in the last 10 years nearly 7 billion pounds of halocarbons have been produced, there are nearly three and one-half billion pounds presently drifting upwards into the ozone layer. That is  $3\frac{1}{2}$  billion pounds that have already been emitted, which cannot be retrieved, and which will ultimately lead to a significant reduction of the shielding ability of the Earth's ultraviolet protective layer.

M. B. McElroy and his coworkers at Harvard University, using several ozone depletion models and refined data, concluded that if the use of fluorocarbon propellants continues to increase by the rate of 10 percent per annum, the decrease in atmospheric ozone could be 10 percent by the year 2000 and as much as 15 percent by 2010. Furthermore, the "Report of the Federal Task Force on Inadvertent Modification of the Stratosphere," June 1975—hereinafter "IMOS Report"—reported that current estimates indicate that even without further growth in halocarbon use above the 1972 level the eventual equilibrium reduction of ozone would be about 7 percent.

If the use of halocarbons continues to grow at the rate of which it grew during the 1960's, a reduction of 10 to 15 percent will occur. A 7 percent reduction in the ozone content of the stratosphere will cause an additional 42,000 to 140,000 cases of skin cancer each year in the United States, and an additional 126,000 to 420,000 cases worldwide, according to the IMOS report.

Second, some would have us delay controls on the use of halocarbons in aerosol spray containers until the absolute scientific proof is available. Industry has asked for 3 years to conduct a thorough investigation of the problem. However, industry asked for a 3-year study period a year ago and is asking for the same 3 years today. Moreover, I do not know that we can wait until the "absolute" proof is in. Can we wait for increased cases of skin cancer? Can we wait for reductions in our crop harvest? Can we wait for physiological alterations in our biological world and uncertain climatic changes?

Gentlemen, can we wait for certain and undisputed proof when a preponderance of evidence is in? For the past year, the evidence has been growing in support of the ozone depletion theory, and growing in support for outright controls on aerosol containers. I believe we can wait no longer and that the January 1, 1978, date for a ban to commence certainly allows a reasonable time to cease the manufacture, production, and import to and export from the United States of these convenience sprays.

Third, and perhaps most importantly, for those of us in Congress who do not have the benefit of a technical, scientific background, is the

fact that a ban on aerosols on January 1, 1978, will impose no undue or inequitable hardship on the public or on the aerosol industry. There is sufficient time to adapt alternatives to halocarbon aerosol propellants. On balance—and I emphasize on balance—in arguing for this amendment, we should recognize the great and significant risks we take by delaying restrictions on aerosol emissions. By waiting longer for further research results that may be years away, and by not realizing the alternatives to freon propellants available now, we may be making a grievous error.

Voting for this amendment will not lock in a ban on aerosol products for two reasons. First, the stratospheric ozone research and protection provision of the clean air act amendments provides for studies on every aspect of the ozone issue, some of which are already underway, by the National Academy of Science, Department of Commerce, National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration, National Science Foundation, and others. If on the basis of these studies, the Environmental Protection Agency Administrator determines that “no significant risk to the public health, safety, or welfare is, or may be posed by the discharge of halocarbons into the ambient air from aerosol containers,” then the Administrator may modify or rescind the ban.

The second reason a ban on aerosol products will not be locked in by this amendment is that “essential uses” of aerosols will be permitted. Virtually all aerosol products are not essential and would be banned, but there are a very few exceptions amounting to a trace amount of the total halocarbon emission. Certain asthmatic aerosols and high speed electric computer circuiting sprays are probably the most essential uses.

However, the essential use section of this amendment is in no way a loophole. The essential use section specifically requires the EPA Administrator to determine that a “particular use of halocarbons in aerosol containers is essential for the public health or welfare and—for which—an adequate substitute for halocarbons is not available.” A brief review of the aerosol market composition further demonstrates the nonessential quality of most propellants.

I ask that a table prepared in this connection be printed in the Record at this point.

Products <sup>1</sup>	Million units <sup>2</sup>	Percentage of total aerosol halocarbon emissions <sup>3</sup>
Consumer products (e.g., room deodorants, cleaners, waxes, and polishers).....	130	5.9
Kitchen pan spray .....	6	.6
Automotive .....	13	.7
Hair care .....	446	35.0
Antiperspirants and deodorants .....	548	40.4
Medicinal and pharmaceutical (not all are essential products).....	59	3.8
Colognes and perfumes .....	137	1.5
Shave lathers .....	17	.2
Other personal products .....	56	3.1
All other products (e.g., insecticides, lubricants).....	183	8.8
Total .....	1,595	100.0

<sup>1</sup> Arthur D. Little, Inc. “Preliminary Economic Impact Assessment of Possible Regulatory Action to Control Atmospheric Emissions of Selected Halocarbons,” IV-7 (September 1975).

<sup>2</sup> A “unit” is defined as a can or bottle, regardless of size.

<sup>3</sup> Some products contain a higher percentage of halocarbon propellants than others; this accounts for the lack of exact correlation between the number of units consumed and the percentage of total halocarbon emissions.

Mr. PACKWOOD. Industry spokesmen will, no doubt, say that this amendment is unwise and uncalled for. They will say that we are not sure yet as to what impact halocarbons have on the ozone layer. They have said that since the issue was first raised by scientists over a year ago. What has happened to the positions held by interest groups, the industry itself, and Government agencies since the ozone depletion model was established by Prof. F. Sherwood Rowland, and Prof. Mario J. Molina?

To begin with, the environmental, consumer, and health public interest groups have rallied in firm support of a ban on halocarbon aerosol products. Second, industry has only maintained the position that the firm evidence is not yet in, they have not stated a scientific refutation of the ozone depletion model. And, lastly, Government officials testifying before the Senate Aeronautical and Space Sciences Ad Hoc Committee on the Upper Atmosphere, chaired by the Senator from Arkansas (Mr. Bumpers), have not contested the ozone depletion model. What is the established scientific record supporting the ozone depletion model?

Increasing quantities of F-11 and F-12, the principal halocarbon compounds used in consumer aerosol products, have been released into the atmosphere, eventually rising to the ozone layer of the stratosphere. There are no known natural chemical or physical reactions by which these chemicals are removed from the lower atmosphere. Worldwide measurements have shown significant concentrations of them in the atmosphere. Atmospheric diffusion models predict that these compounds will reach the stratosphere and are photolyzed by the intense ultraviolet radiation present there. In turn, this produces free chlorine atoms. These chlorine atoms then react with the ozone layer in the stratosphere, depleting the ozone ( $O_3$ ) by converting it to ordinary oxygen. Ozone depletion allows greater intensities of ultraviolet radiation to reach the earth's surface, causing a greater incidence of skin cancer and possible climatic, biological and plant physiological disruptions.

The halocarbon industry claims that there are probably natural atmospheric removal processes for halocarbons called "sinks." However, according to a number of scientists, there appear to be no natural sinks. These chemicals are chemically inert. They are relatively insoluble in water and thus, not removed from the lower atmosphere by rainwater. There are no known mechanisms by which they are biologically degraded.

Furthermore, there appear to be no significant potential sources of Cl atoms in the stratosphere other than F-11 and F-12. Possible natural sources of Cl atoms in the atmosphere which have been suggested are methyl chloride ( $CH_3Cl$ ) and HCl from volcanic eruptions, sea salt aerosols, and meteors.

Approximately 20,000 to 100,000 metric tons per year of  $CH_3Cl$  are released into the atmosphere probably all from natural sources. Being of natural origin, methyl chloride does not enter the picture when determining net losses of stratospheric ozone, since it already participates in the natural, destruction of ozone molecules and determines its present steady-state concentration. Volcanic eruptions, sea salt sprays, and meteors appear to contribute negligible amounts to the atmos-

phere. These substances are effectively removed from the air by precipitation and impaction on vegetation and other obstacles.

Moreover, there is no evidence that their contributions of Cl atoms have any detrimental impact on stratospheric ozone. R. J. Cicerone, R. S. Stolarski, and S. Walter, "Stratospheric Ozone Destruction by Man-Made Chlorofluoromethanes," *Science*, 185, 1165 (1974); M. J. Molina and F. S. Rowland, "Stratospheric Sink for Chlorofluoromethanes: Chlorine Atom Catalysed Destruction of Ozone," *Nature*, 249, 810, (1974); F. S. Rowland and M. J. Molina, "Chlorofluoromethanes in the Environment, Atomic Energy Commission Report No. 1974-1," University of California, Irvine, September 5, 1974.

Atmospheric scientists have carried out halocarbon measurements in the troposphere during the last few years, basically as indicators and tracers of air movements and wind direction. English researchers detected levels of F-11 in the air mass over the Atlantic ranging from 40 parts per trillion to 80 parts per trillion between 60° south and 50° north latitude in 1971-72. These measurements are of the level that would be predicted from the cumulative world production of F-11 prior to 1971 of 2,700 million pounds.

Measurements of the concentrations of these chemicals in the stratosphere have been performed by the Statewide Air Pollution Research Center at the University of California, Riverside. At altitudes between 12 and 18 kilometers, researchers at the center have detected concentration levels of 57 to 75 parts per trillion for F-11 and 85 to 150 parts per trillion for F-12, again, the two principal aerosol propellants.

Similar concentration levels have been measured by J. E. Lovelock for altitudes just above the tropopause and further measurements, conducted by P. W. Krey of the Atomic Energy Commission's Health and Safety Laboratories in New York City, have demonstrated atmospheric concentration levels of F-11 decrease with altitude, with concentration levels ranging from 45 to 75 parts per trillion at lower stratospheric altitudes to 23 parts per trillion at 19 kilometers altitude at 50° north latitude. Each of these vertical concentration data profiles are well within experimental error and each confirms what has been predicted from atmospheric diffusion models and the photolysis of the fluorocarbon compounds in the stratosphere—that halocarbons are diffusing to the ozone layer, where the ozone is thereby depleted.

Moreover, clear evidence confirms that halocarbons are being photolyzed in the stratosphere by atmospheric scientists at the National Oceanic and Atmospheric Administration—NOAA—and the National Center for Atmospheric Research—NCAR. In June 1975, air samples collected by NOAA on a balloon flight over Laramie, Wyo.—42° north latitude—were analyzed for F-11 and F-12 concentrations and compared with atmospheric diffusion model calculations. The vertical concentration profiles of F-11 and F-12 between 16 and 26 kilometers are clearly consistent with the ozone depletion model predictions.

These results, summarized below, show a diminishing amount of halocarbons with increasing altitude in a region clearly above the tropopause. This evidence indicates that fluorocarbon compounds not only are found at these altitudes, but are being photolyzed as predicted, which thereby frees a chlorine atom to decompose ozone (°3).

Atmospheric halocarbon concentration principal aerosol propellants (parts per trillion) June 1975				
Altitude (kilometers):	F-11		F-12	
	Observed	Theoretical	Observed	Theoretical
16.....	80	85	210	180
12.5.....	25	43	140	120
26.....	( <sup>1</sup> )	15	75	75

<sup>1</sup> Less than 20.

Mr. PACKWOOD. Calculations by Molina and Rowland have been confirmed in the last year by several independent investigators. R. J. Cicerone and his associates at the University of Michigan's Space Physics Research Laboratory have estimated the loss of ozone expected from fluorocarbon penetration in the stratosphere, using projection models based on atmospheric mixing. Cicerone concluded that at projected levels of fluorocarbon production and usage, there will be an observable net loss of ozone within one or two decades.

A similar conclusion was reached by P. J. Crutzen of the National Center for Atmospheric Research in Boulder, Colo., who concluded that large reductions of ozone can result at altitudes above 30 kilometers from upward mixing of halocarbon gases. Using a somewhat different model, he has estimated an ozone loss of about 10 percent with the next 30 years, based on the conservative assumption that there will be no increase in use of these compounds after 1973.

Too infrequently we discuss philosophy in this Chamber. I recognize the esoteric nature of the ozone depletion model to many people. How often have those of us in Congress been confronted with other scientific debates on the dangers of DDT, PVC's, mercury and lead poisoning? And how many times were we left at somewhat a loss as to what the specific environmental and human costs were in using those chemicals?

For those who are not persuaded by this scientific record, the calls for a ban on aerosols, or the three reasons I offered earlier, I submit—it would be far better to err on the side of caution by banning aerosols, than waiting for the adverse consequences of ozone depletion to allay our doubts.

The interest groups support for this amendment is broad: The League of Women Voters of the United States, the Consumer Federation of America, Natural Resources Defense Council, Environmental Action, Center for Science in the Public Interest, Environmental Defense Fund, Sierra Club, Friends of the Earth, the Clean Air Coalition, the Health Research Group, and Concern, Inc. While they support the amendment I am proposing, many of these groups vigorously support more stringent and immediate controls on halocarbon emissions from aerosols. I deeply hope my amendment proves to be a reasonable solution which shall have the support of my colleagues.

I ask unanimous consent that the amendment to place a qualified ban on halocarbon aerosols as of January 1, 1978, be printed at this point in the Record.

There being no objection:

## AMENDMENT No. 1577

On page 58-59, strike section 153 and insert in lieu thereof the following:

"Sec. 153. (a) On and after January 1, 1978, except as provided in subsection (b), it shall be unlawful for any person to manufacture, produce, import or export from the United States, aerosol containers containing halocarbons.

"(b) The Administrator shall consider the available reports, consult with appropriate Federal agencies and scientific entities, and afford the opportunity for public hearings, and if he then

"(1) finds that no significant risk to the public health, safety, or welfare is, or may be posed by the discharge of halocarbons into the ambient air from aerosol containers, then he may, by rule modify or rescind the prohibition in Sec. 153 (a) in whole or in part consistent with that finding or

"(2) determines that a particular use of halocarbons in aerosol containers is essential for the public health or welfare and an adequate substitute for halocarbons is not available he may grant specific exemptions from the prohibitions of this Section to allow the use of small quantities in such situations.

"(c) From time to time the Administrator may revise any of the regulations issued pursuant to this Section in the light of new evidence as to the need for such regulations.

"(d) Nothing in this section shall limit, restrict, or otherwise detract from the authority provided in Section 154 of this Act, or any authority under the Consumer Product Safety Act.

Mr. HATFIELD. My colleagues in the Senate are familiar with my disdain for the idolatry of technology for the sake of consumer convenience. This disdain was one reason for my introduction, along with Senator Packwood, of legislation to ban the use of nonreturnable beverage containers. With the growing concern over the effect on the ozone layer of the continued use of aerosol spray containers, we have a similar issue. It is time that we stop worshipping at the altar of technology, when the unquestioning acceptance of such technology may present a serious threat to the public health and welfare as well as the environment.

Therefore, I am pleased to join Senator Packwood and several other of my colleagues in cosponsoring this amendment. Last year Senator Packwood and I introduced a bill, S. 1982, to preserve the ozone in the stratosphere from dangerous emissions of halocarbons by banning the manufacturer and sale of aerosol spray containers. This amendment to the Clear Air Act provides for the same thing, but allows the Administrator of the Environmental Protection Agency some discretion in administering the law—specifically to permit the use of small amounts of these halocarbons where such use is necessary and alternative propellants are not available.

It is my belief that, where there is justifiable suspicion that a certain substance may be hazardous to the general health or public welfare, that the burden of proof must be on the manufacturer to prove his product safe. This premise becomes even more significant when you realize that, in the case of the ozone layer, it takes many years for evidence of deterioration to become measurable. To wait until the damage has been done would not be responsible.

Many firms, including Johnson Wax Co., have already taken steps to review and alter their production policies in keeping with our concern over ozone depletion. The State of Oregon has also taken the initiative to ban the use of aerosols in the near future. It is time that we recognize the potentially dangerous implications of further indiscriminate use of aerosols, and begin to reorder both our production and consumption patterns.

94TH CONGRESS  
2D SESSION

# S. 3219

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IN THE SENATE OF THE UNITED STATES

APRIL 7, 1976

Ordered to lie on the table and to be printed

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## AMENDMENT

Intended to be proposed by Mr. PACKWOOD (for himself, BUMPERS, Mr. MCINTYRE, Mr. GARY HART, Mr. BROOKE, Mr. HATHAWAY, Mr. HATFIELD, Mr. ABOUREZK, and Mr. HOLLINGS) to S. 3219, a bill to amend the Clean Air Act, as amended, viz: On pages 58 and 59, strike section 153 and insert in lieu thereof the following:

1       “SEC. 153. (a) On and after January 1, 1978, except  
2 as provided in subsection (b), it shall be unlawful for any  
3 person to manufacture, produce, import, or export from the  
4 United States, aerosol containers containing halocarbons.

5       “(b) The Administrator shall consider the available  
6 reports, consult with appropriate Federal agencies and sci-  
7 entific entities, and afford the opportunity for public hearing,  
8 and if he then—

9       “(1) finds that no significant risk to the public

**Amdt. No. 1577**

1 health, safety, or welfare is, or may be posed by the dis-  
2 charge of halocarbons into the ambient air from aerosol  
3 containers, then he may, by rule, modify or rescind the  
4 prohibition in section 153 (a) in whole or in part con-  
5 sistent with that finding, or

6 “(2) determines that a particular use of halocar-  
7 bons in aerosol containers is essential for the public  
8 health or welfare and an adequate substitute for halo-  
9 carbons is not available, he may grant specific exemp-  
10 tions from the prohibitions of this section to allow the  
11 use of small quantities in such situations.

12 “(c) From time to time the Administrator may revise  
13 any of the regulations issued pursuant to this section in the  
14 light of new evidence as to the need for such regulations.

15 “(d) Nothing in this section shall limit, restrict, or  
16 otherwise detract from the authority provided in section 154  
17 of this Act, or any authority under the Consumer Produce  
18 Safety Act.

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IN THE SENATE OF THE UNITED STATES

APRIL 9, 1976

Ordered to lie on the table and to be printed

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**AMENDMENTS**

Intended to be proposed by Mr. BAKER (for himself, Mr. BUCKLEY, and Mr. STAFFORD) to S. 3219, a bill to amend the Clean Air Act, as amended, viz:

1       On page 70, strike line 13 through line 25, and insert  
2   in lieu thereof the following:

3       “SEC. 27. Section 207 (a) (1) of the Clean Air Act  
4   is amended by adding the following new sentences at the  
5   end thereof: “The cost of any part, device, or component of  
6   any light-duty vehicle that is designed for emission control  
7   and which in the instructions issued pursuant to subsection  
8   (c) (3) of this section is scheduled for placement during  
9   the useful life of the vehicle in order to maintain compliance  
10   with regulations under section 202 of this Act, the failure of  
11   which shall not interfere with the normal performance of

**Amdt. No. 1586**

1 the vehicle, and the expected retail price of which, including  
2 installation costs, is greater than 2 per centum of the sug-  
3 gested retail price of such vehicle, shall be borne or re-  
4 imburse at the time of replacement by the vehicle manufac-  
5 turer and shall be provided without cost to the ultimate  
6 purchaser, subsequent purchaser, or dealer. The term "de-  
7 signed for emission control" as used herein means a catalytic  
8 converter, thermal reactor, or other component installed on  
9 or in a vehicle for the sole or primary purpose of reducing  
10 vehicle emissions. It is not intended to include those vehicle  
11 components which were in general use prior to model year  
12 1968 and the primary function of which is not related to  
13 emission control.'".

14 On page 73, after line 5, insert the following new section,  
15 and renumber the succeeding sections accordingly:

16 "SEC. 30. Section 207 of the Clean Air Act is amended  
17 by adding the following new subsection:

18 " '(g) For the purposes of this section, the owner of any  
19 motor vehicle or motor vehicle engine warranted under this  
20 section is responsible in the proper maintenance of such  
21 vehicle or engine to replace and to maintain, at his expense  
22 at any service establishment or facility of his choosing, such  
23 items as spark plugs, points, condensers, and any other part,  
24 item, or device related to emission control (but not designed  
25 for emission control under the terms of the last three sen-

1 tences of section 207 (a) (1) ) that has a design life of less  
2 than the useful life of such vehicle or engine, unless such  
3 part, item, or device is covered by any warranty not man-  
4 dated by this Act or unless such part fails prior to its design  
5 life.' ”.

## AMENDMENT NO. 1596

Mr. BENTSEN (for himself, Mr. Philip A. Hart, Mr. Hruska, Mr. Symington, Mr. Montoya, Mr. Johnston, Mr. Moss, Mr. Garn, Mr. Griffin, Mr. Helms, Mr. Morgan, Mr. Hollings, Mr. Curtis, Mr. Laxalt, and Mr. Stone) submitted an amendment intended to be proposed by them, jointly, to the bill (S. 3219) to amend the Clean Air Act.

## AMENDMENT NO. 1597

Mr. RANDOLPH submitted an amendment intended to be proposed by him to the bill (S. 3219), *supra*.

## AMENDMENTS NOS. 1598 THROUGH 1600

Mr. Moss (for himself, Mr. Metcalf, Mr. Johnston, Mr. Garn, Mr. Fannin, Mr. Tower, Mr. Stone, and Mr. Eastland) submitted three amendments intended to be proposed by them, jointly, to the bill (S. 3219), *supra*.

## CLEAN AIR OR ANTISEPTIC ISOLATION?

Mr. Moss. The Public Works Committee has been considering amendments to the Clean Air Act since June 17, 1975.

## THE NATURE AND SCOPE OF THE NONDETERIORATION SECTION

A careful reading of the bill and committee report shows the importance to the bill of the nondeterioration section of the amendments. On March 10 I expressed my concern that this section might not present a balanced approach to competing national priorities of environmental protection versus necessary future economic development. The section requires the classification of areas of the Nation having air quality better than required under national ambient air quality standards so as to restrict development in such areas. Under existing law, national ambient air quality standards set maximum levels of certain pollutants and are intended to protect against impingements upon the public health and welfare, including indirect effects such as crop damage.

The committee's new amendments go considerably beyond existing law. Section 6 of the bill would classify areas having air quality better than the national ambient standards as either class I, in which practically no development would be allowed, or class II in which limited development would be permitted until a specified level of air quality is reached, and would thereafter prohibit any further development. Such a policy may well be necessary to protect certain parks and retreats that have been set aside for the more spiritual and aesthetic pursuits of mankind. As a major advocate of the creation of three of these dedicated park areas, I share the committee's concern for their protection. However, such an important issue deserves more than an eight page discussion in a committee report. [Sec. 162(a)(b)]

Nondeterioration has not been widely enough discussed or debated, and it has never been the subject of legislative hearings. To be sure, the committee has debated the issue extensively, but those who will be im-

pacted the most, the States and local governmental units, have not been adequately considered or consulted. For most of us, the eight pages of the committee report must serve as the only point of focus. That concerns me, for this section of the report is rather cursory and seems to attempt to justify the committee's conclusions rather than to explain them or state the alternatives.

#### THE IMPACT ON STATE AND LOCAL GOVERNMENTS OF THE NONDETERIORATION POLICY

During the past few months, I have heard from a number of competing persons and institutions regarding the nondeterioration provisions of the amendments. I am sure that this is also the case for most of my colleagues in Congress. To put it very mildly, these local governments are concerned—deeply concerned.

Section 6 would have a much more severe impact on some States than on others. This is especially true for States like Utah, which is now experiencing strong industrial expansion, much of it related to the production of energy in compliance with our national goal of energy independence. Are our Western States and energy resource States to be held to present levels of expansion? Can the Congress discriminate so unfairly?

Although a study has been made of the effects of nondeterioration on some States and on some industries—electric power industry—no comprehensive study has yet been completed, or to my knowledge, even undertaken, to identify its effects on other States and other industries. The local governments are justifiably concerned. What will be the loss of employment, loss of energy resources and loss of tax revenues? On April 1, the chairman of the committee reported to the Senate several communications which he had received in response to his requests of several Federal agencies as to the effect of these amendments. After considering the reports of these Federal agencies, it is apparent to me that we simply do not know what the long-range effects will be.

#### CAN NONDETERIORATION BE EFFECTIVELY ADMINISTERED?

These provisions are being proposed before an analysis of their economic effect, which is likely to be highly significant, has taken place. The economic impact cannot be known at present, because the areas of the States which presently meet or fail to meet the present Federal health and welfare standards have not yet been fully identified. In addition, the manner in which State agencies will be allowed to define those areas—that is by county, by metropolitan areas, by computer modelling of existing major sources of pollution, and so forth—is left open in the proposed legislation. The determination of this critical question has thus been left to the courts. It seems highly inappropriate to enact major legislation of this kind without actually knowing the areas which will be affected and the economic impact which the legislation will have. This is especially so when the limits being set are more stringent than those required to meet already existing health and welfare clean air standards and when it seems safe to assume that the economic impact will be highly significant.

The fact is that the technology necessary to determine with reasonable precision whether the proposed allowable nondeterioration increments are or will be met is not presently available. In addition, variations in wind and weather conditions throughout the United States make development of such technology in the near future somewhat questionable. The recent statement by Dr. John Knelson, EPA's laboratory, that "We are making multibillion dollar decisions about controlling air pollution on a 25 cent data base," only confirms an existing concern about our technical capabilities in this area. Before these provisions are enacted, the EPA's technical capabilities to implement and administer it appropriately should be confirmed.

#### THE NEED FOR BALANCING OF COMPETING INTERESTS

In a recent article by Robert M. Hutchins in the *Center* magazine, democracy is described as a system of government by which people rule and are in turn ruled by consideration of the "good life" for the whole. The aim of any democracy must be the common good enjoyed as a result of membership in the community. The exact opposite of democracy is government by pressure groups, under which special interests, by deals and/or propaganda, endeavor to exploit the community for their own particularized benefit.

To a very real extent, the Congress is now faced with deciding either between these competing alternatives of self-interest, or else in deciding to refuse to make the alternatives mutually exclusive and in seeking some sort of accommodation between them for the common good. When Congress decides what degree of "harshness" to enact in this area of clean air legislation, it is asking the question, "What is the common good?"

I have no doubt that our American way of life is more a matter of quality than quantity. We are gluttons for the most part, consuming an inordinate amount of the world's goods and services for the purpose of maintaining a lifestyle of often questionable relevance and validity. Conservationists have predicted, for example, that we could reduce our consumption of energy by 25 percent without any significant impact upon our standard of living. To the extent that we can conserve, we should conserve. Our quality of life need not be adversely affected by that conservation.

There is, however, the other side of the coin, and fairness requires that it receive equal attention. Our society enjoys an abundance of goods, services, and free time that make it qualitatively the envy of the entire world, because we have not been afraid to develop all our native and natural resources to their maximum potential. We are envied not entirely for our political institutions. Our technology and standard of living are also perceived as worth imitating. We have not shied away from new technologies and new ways of doing things. At the same time that we may require quality control and regulation of the products of our industries, we have retained that faith that suggests that no problem is insurmountable and no crisis unsolvable, and that given the need, the time, and the money, most obstacles can be overcome.

Our concerns for the environment must be basic and long lasting. However, environmental concerns of the Congress have matured to the point where it is now imperative to weigh the indirect effects of our

policies of preservation and protection against competing national interests and priorities. We must have clean air to breathe, and we must protect crops and wildlife from harm. To some extent, however, protecting against the last increments of air pollution, must be considered a luxury when compared with possible adverse effects on required economic development, expansion of employment, and development of energy resources. When pollution control becomes an end in itself, rather than a means to the end—that of contributing to the “good life” for the community—then perhaps it has gone too far.

Further cutbacks in energy self-sufficiency, for example, begin to cost jobs, begin to cut down on social mobility, and begin to introduce an element of uncertainty into an otherwise dynamic and progressive economy. Investment decisions that should be made are now avoided. Improvements in the living conditions of the poor, the elderly, and those on fixed incomes are necessarily avoided. Further improvements in the productivity of labor are curtailed with the unhappy result that more human effort is required for the same quantity of output. In short, the economy is operating on a fraction of its potential. In such a scenario we all suffer—and not just quantitatively. Especially in the middle and lower income brackets the effect is all too real and all too qualitative.

And so, even assuming some real, demonstrable pollution, the question must still be asked whether, on balance, the industrial expansion is worth the pollution to the environment. And if there is doubtful effect on the environment, then the argument becomes considerably stronger to allow necessary development.

We have all read the disquieting accounts recently of abuses in the EPA's measuring and interpreting of data regarding the effects of pollution on the environment. At least one EPA employee, Dr. Finklea, is charged with having manufactured information to relate sulfur concentrations to the death of a number of individuals. I am not arguing that the EPA standards are wrong, but until we know what facts they base these standards on, we will be hard pressed to make any intelligent assessment of their programs.

Even the Public Works Committee in reporting the bill expressed severe reservation, perhaps unintentionally, about the adequacy and utility of their proposed standards. Quoting from the report of the committee:

The Committee believes that given the current state of the art of diffusion modeling, the wide differences of opinion regarding the assumptions used in the modeling process the disagreements between industry, environmentalists, and government agencies regarding implications of the specific increments (of pollution) required under this Act, and the predictions about the economic impact of these requirements, it would be useful to have an ongoing review of this process.

By the committee's own words, there is: First, a lack of consensus about our ability to measure pollutant levels from various industrial concerns, in any meaningful way; and second, serious doubt about the effects of those levels of pollution upon health, welfare, and more aesthetic concerns. To be sure something happens, and there is every reason to believe that it is in a deleterious direction for those subject to it, but as for specifics as to what degree of harm or what magnitude of concern to expect, there is a rather embarrassing void. And yet we are being asked to effectively curtail much of our general industrial

output, and most of our new energy development on the basis of these perceived but illusive hazards.

I can only conclude that the best interests of the country suggest that we develop more precision in our measuring, monitoring, and interpretative capability, before we impose the results of that capability on an industrial sector struggling to overcome some very serious effects of our recent recession and long-term energy shortage. This conclusion should not be viewed as an obstructionist policy to defeat the intent of the Clean Air Act, for I fully support that intent. I just want to be sure that we know what we are doing before we do it.

Before we act on this matter, let us determine whether the policy of nondeterioration is needed, whether we can afford it, and if it is really the way to allocate our resources for the benefit of the Nation. These provisions are far too important to be acted upon hastily. We should support a further study of the nondegradation concept and the adequacy of the information on which that policy is based. We need to know the answers to a number of questions. For example, what land areas will be covered? How will the law apply to those States which are currently experiencing or are expecting to experience future economic growth? What will the economic impact be in terms of jobs, incentives to build abroad, economies of scale, anticompetitive effects, costs of construction delays, et cetera? What are the health and welfare hazards in light of the fact the proposals set restrictions which are more limited than those imposed by the present national health or welfare standards? What are our present technical air monitoring capabilities? Are they sufficient to intelligently implement and administer legislation of this sort?

The answers to these questions do not presently appear to be available. Yet they form the critical factual base necessary for making the major planning judgments which the nondeterioration provisions imply.

Business, labor, city, and State officials, economists and many interest groups in the mainstream of American life have the right to participate in the analysis and determination of this important issue.

The amendments I submit today will provide us with the information we need to make a well-considered decision on this important issue.

I urge my colleagues to carefully consider supporting these amendments. I think they will find, as I have, that such an assessment with current information is very difficult to make in any but general terms. A major problem is that no one seems to know on a county-by-county basis how specific areas would be classified. It is my intention to request that the EPA assess the possible impacts of the nondeterioration provision on my home State of Utah, and I hope that my colleagues will do the same for their respective States.

#### THE AMENDMENTS

I propose to amend section 37 of the bill. This section presently amends the existing Clean Air Act by establishing a National Commission on Air Quality. [Sec. 323] I proposed to expand the mandate of the Commission by requiring that it prepare a report to the Congress on the economic and energy effects of the proposed policy of non-

degradation and to further consider the policy in terms of its measurability and interpretative certainty. It is my intention that this report be comprehensive. The report is to be prepared within 1 year after the date of enactment of the bill. No action is to be taken under section 6 until that report has been prepared and until Congress has been able to adequately consider its findings. In the interim, existing national standards for ambient air quality will remain in effect.

I ask that they be printed in the Record.

#### AMENDMENT No. 1598

The Clean Air Act is hereby amended by deleting section 6 and renumbering succeeding sections accordingly.

#### AMENDMENT No. 1599

Section 37 is amended as follows:

"SEC. 37. Section 315(d), (redesignated as 315(f) by the foregoing amendment) is further amended by changing the reference to 'section (a) (3)' to 'section (a) (4)', by striking everything after 'March 1, 1977,' and by inserting in lieu thereof, 'and the results of the investigation and study concerning section (a) (1) of this section no later than one year after the date of enactment of the Clean Air Act Amendments of 1976'."

As amended section 315(f) would provide as follows:

"(f) A report, together with any appropriate recommendations, shall be submitted to the Congress on the results of the investigation and study concerning section (a) (4) of this section no later than March 1, 1977, and the results of the investigation and study concerning section (a) (1) of this section no later than one year after the date of enactment of the Clean Air Act Amendments of 1976."

#### AMENDMENT No. 1600

Section 37 is hereby amended by redesignating the subsection 315(b) as subsection 315(d), redesignating succeeding subsections accordingly, and inserting a new subsection (a), subsection (b), and subsection (c) as follows:

#### NATIONAL COMMISSION ON AIR QUALITY

SEC. 315. (a) There is established a National Commission on Air Quality which shall study and report to the Congress on—

(1) the effects of the implementation of any proposed or existing requirement on the states or the Federal Government under this Act to identify and protect from significant deterioration of air quality, areas which have existing air quality better than that specified under current national primary and secondary standards;

(2) the economic, technological, and environmental consequences of achieving or not achieving the purposes of this Act and programs authorized by it;

(3) available alternatives, including enforcement mechanisms to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population, and to achieve the other purposes of the Act;

(4) the technological capability of achieving and the economic, energy, and environmental impacts of achieving or not achieving required emission control levels of mobile sources of oxides of nitrogen (including the research objective of 0.4 gram per vehicle mile) in relation to and independent of regulation of emissions of oxides of nitrogen from stationary sources;

(5) air pollutants not presently regulated, which pose or may in the future pose a threat to public health or public welfare and options available to regulate emissions of such pollutants;

(6) the adequacy of research, development, and demonstrations being carried out by Federal, State, local, and nongovernmental entities to protect and enhance air quality; and

(7) the ability of (including financial resources, manpower, and statutory authority) Federal, State, and local institutions to implement the purposes of the Act.

(b) Studies and investigations conducted pursuant to paragraphs (1) and (2) of subsection (a) shall include—

(1) the effects of existing or proposed national ambient air quality standards on employment, energy, and the economy (including state and local), their relationship to objective scientific and medical data collected to determine their validity at existing levels, as well as their other social and environmental effects;

(2) the effects of any existing or proposed policy of prohibiting deterioration of air quality in areas identified as having air quality better than that required under existing or proposed national ambient standards on employment, energy, the economy (including state and local), the relationship of such policy to the protection of the public health and welfare as well as other national priorities such as economic growth and national defense, and its other social and environmental effects.

(c) The Commission shall, as a part of any study conducted under subsection

(a) (1) of this section, specifically identify any loss or irretrievable commitment of resources (taking into account economic feasibility), including mineral, agricultural and water resources, as well as land surface-use resources.

Calendar No. 685

94<sup>TH</sup> CONGRESS  
2<sup>D</sup> SESSION**S. 3219**

IN THE SENATE OF THE UNITED STATES

APRIL 13, 1976

Ordered to lie on the table and to be printed

**AMENDMENTS**

Intended to be proposed by Mr. BENTSEN (for himself, Mr. PHILIP A. HART, Mr. HRUSKA, Mr. SYMINGTON, Mr. MONTOLA, Mr. JOHNSTON, Mr. MOSS, Mr. GARN, Mr. GRIFFIN, Mr. HELMS, Mr. MORGAN, Mr. HOLLINGS, Mr. CURTIS, Mr. LAXALT, and Mr. STONE) to S. 3219, a bill to amend the Clean Air Act, as amended, viz:

1       On page 70, beginning with line 4, strike out all through  
2 line 5 on page 73, and insert the following:

3       “SEC. 26. (a) Section 207 (b) (2) of the Clean Air Act  
4 (42 U.S.C. 1857f-5a (b) ) is amended by adding the follow-  
5 ing at the end thereof: ‘No such warranty shall be invalid  
6 on the basis of any part used in the maintenance or repair  
7 of a vehicle or engine if such part was certified as provided  
8 under subsection (a) (2).’ ”.

9       (b) Section 207 (a) of such Act is amended by inserting

Amdt. No. 1596

1 “(1)” after “(a)” and by adding the following new para-  
2 graph at the end thereof:

3 “(2) In the case of a motor vehicle part or motor vehicle  
4 engine part, the manufacturer of such part may certify that  
5 use of such part not result in a failure of the vehicle or engine  
6 to comply with emission standards promulgated under section  
7 202. Such certification shall be made only under such reg-  
8 ulations as may be promulgated by the Administrator to  
9 carry out the purposes of subsection (b). The Administra-  
10 tor shall promulgate such regulations no later than two years  
11 following the date of the enactment of this paragraph.”.

12 (c) (1) Section 207 (b) of such Act is amended by  
13 striking out “its useful life (as determined under section 202  
14 (d) ) ” in each place it appears and inserting in lieu thereof  
15 “a period of eighteen months or eighteen thousand miles (or  
16 the equivalent), whichever first occurs.”.

17 (2) Section 207 of such Act is amended by adding the  
18 following new subsection at the end thereof:

19 “(g) In lieu of the eighteen-month or eighteen-thou-  
20 sand-mile period of use referred to in subsection (b) there  
21 shall be substituted ‘the useful life of the vehicle or engine  
22 (as determined under section 202 (d) ) ’ if the Federal Trade  
23 Commission finds under section 26 (d) of the Clean Air Act  
24 Amendments of 1976 that no significant anticompetitive

1 effects result from the application of such warranty for such  
2 useful life.”.

3 (d) The Federal Trade Commission shall undertake a  
4 study to determine whether or not any anticompetitive effects  
5 would result from any warranty required to be provided  
6 pursuant to section 207 (b) of the Clean Air Act if such  
7 warranty applied for the useful life (as determined under  
8 section 202 (d) of such Act) of vehicles and engines to which  
9 such warranty applies in lieu of the eighteen-month or  
10 eighteen-thousand-mile period specified in such section 207  
11 (b). Such study shall include public hearings. Such study  
12 shall include an analysis of any measures implemented by the  
13 Administrator to prevent or diminish such anticompetitive  
14 effects and shall include a finding with respect to whether  
15 or not a significant anticompetitive effect would nevertheless  
16 result from such warranty if the warranty applied for such  
17 useful life. Such study shall be undertaken primarily by the  
18 Bureau of Competition in consultation with the Bureau of  
19 Consumer Affairs.

20 (e) (1) Section 207 (c) (3) of such Act is amended by  
21 inserting after the first sentence thereof the following: “In no  
22 event and under no circumstances shall a manufacturer (in  
23 written instructions or otherwise), specify, require, or desig-  
24 nate the use of any proprietary or brand name automotive

1 part, material, or substance for purposes of this paragraph.  
2 For such purposes, the manufacturer may only specify per-  
3 formance standards or engineering specifications or the use of  
4 parts which have been certified as provided in subsection (a)  
5 (2) or parts meeting such standards or specifications. No  
6 manufacturer may directly or indirectly specify for such  
7 purposes that maintenance, replacement, or repair may only  
8 be performed by franchised dealers or approved automotive  
9 service establishment. The manufacturer shall provide in  
10 boldface type on the first page of the written maintenance  
11 instructions notice that maintenance of the emission control  
12 devices and systems may be performed by any automotive  
13 repair establishment or any individual using any automotive  
14 part which meets the performance and engineering specifica-  
15 tions of the manufacturer or which has been certified as  
16 provided in subsection (a) (2).”.

17 (f) Section 207 (c) of such Act is amended by adding  
18 at the end thereof the following new paragraph:

19 “(4) In the case of any nonconformity of any vehicle or  
20 engine required to be remedied at the expense of the manu-  
21 facturer under this subsection, the owner of such vehicle or  
22 engine shall be, under regulations promulgated by the Ad-  
23 ministrator, compensated by the manufacturer for any amount  
24 expended by him with respect to such nonconformity before

1 the date on which such nonconformity is required to be reme-  
2 died under this subsection.”.

3 On page 73, line 6, strike out “SEC. 30” and insert  
4 “SEC. 27”.

5 On page 73, beginning with line 21, strike out all through  
6 line 10 on page 74.

7 Renumber sections 32 through 41 as sections 28 through  
8 37, respectively.

Calendar No. 685

94TH CONGRESS  
2D SESSION**S. 3219**

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IN THE SENATE OF THE UNITED STATES

APRIL 13, 1976

Ordered to lie on the table and to be printed

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**AMENDMENTS**

Intended to be proposed by Mr. RANDOLPH to S. 3219, a bill to amend the Clean Air Act, as amended, viz:

1       On page 45, line 12, insert the following new section and  
2   renumber subsequent sections accordingly:

3       “SEC. 12. Section 113 of the Clean Air Act is amended  
4   by adding the following new subsection:

5       “(h) The Administrator, when enforcing the provi-  
6   sions of any State implementation plan with respect to sta-  
7   tionary sources, shall enforce only those provisions of such  
8   plan which provide for the imposition of emission limita-  
9   tions, and schedules and timetables for compliance with such  
10   limitations.’.”

11       On page 77, line 12, strike the period and insert the  
Amdt. No. 1597

1 following: “: *Provided, however,* That emission limitations  
2 and schedules or timetables of compliance related to such  
3 limitations shall not be construed to include those provisions  
4 of a State implementation plan which deal with opacity  
5 requirements or limitations on visible emissions.”.

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2D SESSION**S. 3219**

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IN THE SENATE OF THE UNITED STATES

APRIL 13, 1976

Ordered to lie on the table and to be printed

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**AMENDMENT**

Intended to be proposed by Mr. MOSS (for himself, Mr. METCALF, Mr. JOHNSTON, Mr. GARN, Mr. FANNIN, Mr. TOWER, Mr. STONE, and Mr. EASTLAND) to S. 3219, a bill to amend the Clean Air Act, as amended, viz:

- 1       The Clean Air Act is hereby amended by deleting sec-
- 2       tion 6 and renumbering succeeding sections accordingly.

Amdt. No. 1598

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94TH CONGRESS  
2D SESSION**S. 3219**

IN THE SENATE OF THE UNITED STATES

APRIL 13, 1976

Ordered to lie on the table and to be printed

**AMENDMENTS**

Intended to be proposed by Mr. MOSS (for himself, Mr. METCALF, Mr. JOHNSTON, Mr. GARN, Mr. FANNIN, Mr. TOWER, Mr. STONE, and Mr. EASTLAND) to S. 3219, a bill to amend the Clean Air Act, as amended, viz:

1 Section 37 is amended as follows:

2 "SEC. 37. Section 315 (d) (redesignated as 315 (f) by  
3 the foregoing amendment) is further amended by changing  
4 the reference to 'section (a) (3)' to 'section (a) (4)', by  
5 striking everything after 'March 1, 1977,' and by inserting in  
6 lieu thereof 'and the results of the investigation and study  
7 concerning section (a) (1) of this section no later than one  
8 year after the date of enactment of the Clean Air Act Amend-  
9 ments of 1976'."

10 As amended section 315 (f) would provide as follows:

Amdt. No. 1599

1       “(f) A report, together with any appropriate recom-  
2       mendations, shall be submitted to the Congress on the results  
3       of the investigation and study concerning section (a) (4)  
4       of this section no later than March 1, 1977, and the results  
5       of the investigation and study concerning section (a) (1)  
6       of this section no later than one year after the date of enact-  
7       ment of the Clean Air Act Amendments of 1976.”.

**S. 3219**

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IN THE SENATE OF THE UNITED STATES

APRIL 13, 1976

Ordered to lie on the table and to be printed

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**AMENDMENT**

Intended to be proposed by Mr. MOSS (for himself, Mr. METCALF, Mr. JOHNSTON, Mr. GARN, Mr. FANNIN, Mr. TOWER, Mr. STONE, and Mr. EASTLAND) to S. 3219, a bill to amend the Clean Air Act, as amended, viz: Section 37 is hereby amended by redesignating subsection 315 (b) as subsection 315 (d), redesignating succeeding subsections accordingly, and inserting a new subsection (a), subsection (b), and subsection (c) as follows:

1           NATIONAL COMMISSION ON AIR QUALITY

2           SEC. 315. (a) There is established a National Commis-  
3 sion on Air Quality which shall study and report to the  
4 Congress on—

5           (1) the effects of the implementation of any pro-  
6 posed or existing requirement on the States or the Fed-  
7 eral Government under this Act to identify and protect

**Amdt. No. 1600**

1 from significant deterioration of air quality, areas which  
2 have existing air quality better than that specified under  
3 current national primary and secondary standards;

4 (2) the economic, technological, and environmental  
5 consequences of achieving or not achieving the purposes  
6 of this Act and programs authorized by it;

7 (3) available alternatives, including enforcement  
8 mechanisms to protect and enhance the quality of the  
9 Nation's air resources so as to promote the public health  
10 and welfare and the productive capacity of its population,  
11 and to achieve the other purposes of the Act;

12 (4) the technological capability of achieving and  
13 the economic, energy, and environmental impacts of  
14 achieving or not achieving required emission control  
15 levels for mobile sources of oxides of nitrogen (including  
16 the research objective of 0.4 gram per vehicle mile) in  
17 relation to and independent of regulation of emissions  
18 of oxides of nitrogen from stationary sources;

19 (5) air pollutants not presently regulated, which  
20 pose or may in the future pose a threat to public health or  
21 public welfare and options available to regulate emissions  
22 of such pollutants;

23 (6) the adequacy of research, development, and  
24 demonstrations being carried out by Federal, State, local,

1 and nongovernmental entities to protect and enhance  
2 air quality; and

3 (7) the ability of (including financial resources,  
4 manpower, and statutory authority) Federal, State, and  
5 local institutions to implement the purposes of the Act.

6 (b) Studies and investigations conducted pursuant to  
7 paragraphs (1) and (2) of subsection (a) shall include—

8 (1) the effects of existing or proposed national  
9 ambient air quality standards on employment, energy,  
10 and the economy (including State and local), their  
11 relationship to objective scientific and medical data col-  
12 lected to determine their validity at existing levels, as  
13 well as their other social and environmental effects;

14 (2) the effects of any existing or proposed policy  
15 of prohibiting deterioration of air quality in areas identi-  
16 fied as having air quality better than that required under  
17 existing or proposed national ambient standards on em-  
18 ployment, energy, the economy (including State and  
19 local), the relationship of such policy to the protection  
20 of the public health and welfare as well as other national  
21 priorities such as economic growth and national defense,  
22 and its other social and environmental effects.

23 (c) The Commission shall, as a part of any study con-  
24 ducted under subsection (a) (1) of this section, specifically

- 1 identify any loss or irretrievable commitment of resources
- 2 (taking into account economic feasibility), including min-
- 3 eral, agricultural, and water resources, as well as land surface-
- 4 use resources.

**S. 3219**

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IN THE SENATE OF THE UNITED STATES

APRIL 28, 1976

Ordered to lie on the table and to be printed

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**AMENDMENTS**

Intended to be proposed by Mr. WILLIAM L. SCOTT to S. 3219,  
a bill to amend the Clean Air Act, as amended, viz:

1       On page 1, after line 2, insert the following:

2       “SECTION 1. Section 101 (b) (1) of the Clean Air Act  
3 is amended to read as follows:

4               “(1) to protect and enhance the quality of the  
5 Nation’s air resources by establishing, achieving, and  
6 maintaining national ambient air quality standards,  
7 standards of performance for new stationary sources, and  
8 national emission standards for hazardous air pollutants  
9 so as to promote the public health and welfare and the  
10 productive capacity of the Nation, but nothing in this  
11 Act is intended to require or provide for the establish-

**Amdt. No. 1617**

1       ment of standards more stringent than primary and sec-  
2       ondary ambient air quality standards;”.

3       On page 1, line 3, strike out “SECTION 1” and insert  
4       “SEC. 2”.

5       On page 2, line 18, strike out “2” and insert “3”.

6       On page 2, line 21, strike out “, prevention of significant  
7       deterioration,”.

8       On page 4, line 20, strike out “3” and insert “4”.

9       On page 5, line 1, strike out “4” and insert “5”.

10       On page 9, beginning with line 8, strike out all through  
11       “(b)” in line 19 and insert in lieu thereof “SEC. 6. (a)”.

12       On page 10, line 9, strike out “(c)” and insert in lieu  
13       thereof “(b)”.

14       On page 10, beginning with line 17, strike out all  
15       through “(iii)” in line 18 and insert in lieu thereof “and  
16       (ii)”.

17       On page 10, line 19, strike out “(d)” and insert in lieu  
18       thereof “(c)”.

19       On page 10, line 21, strike out all following the quota-  
20       tion marks through the semicolon in line 22.

21       On page 10, line 25, strike out “(c)” and insert in lieu  
22       thereof “(d)”.

23       On page 11, line 3, strike out all after “section 111” to  
24       the comma in line 5.

1       On page 11, beginning with line 6, strike out all  
2 through line 21 on page 20.

3       On page 20, line 24, strike out "(h)" and insert in  
4 lieu thereof "(g)".

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2D SESSION**S. 3219**

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IN THE SENATE OF THE UNITED STATES

APRIL 29, 1976

Ordered to lie on the table and to be printed

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**AMENDMENTS**

Intended to be proposed by Mr. DOMENICI to S. 3219, a bill to amend the Clean Air Act, as amended, viz:

1       On page 20, line 22, insert “ (a) ” after “SEC. 7.”.

2       On page 28, after line 7, insert the following:

3       “ (b) Section 110 of the Clean Air Act is amended by  
4 adding a new subsection as follows:

5       “ (i) In carrying out the requirements of subsections

6 (a) (2) (B) (i) and (ii), (g), and (h) of this section and

7 subsections (d) and (g) of section 113, the State shall pro-

8 vide a satisfactory process of consultation with general pur-

9 pose local governments and designated organizations of

10 elected officials of local governments, in accordance with

11 regulations promulgated by the Administrator to assure ade-

**Amdt. No. 1623**

1 quate consultation. Such regulations shall be promulgated  
2 after notice and opportunity for public hearing and not later  
3 than four months after the date of enactment of the Clean  
4 Air Amendments of 1976. The Administrator may dis-  
5 approve any portion of a plan relating to any measure  
6 described in the first sentence of this subsection or to the  
7 consultation process required under this subsection if he  
8 determines that such plan does not meet the requirements  
9 of this subsection. Only a general purpose unit of local gov-  
10 ernment, regional agency, or council of governments ad-  
11 versely affected by action of the Administrator approving any  
12 portion of a plan referred to in this subsection may petition  
13 for review of such action on the basis of a violation of the  
14 requirements of this subsection.' ”.

**S. 3219**

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**IN THE SENATE OF THE UNITED STATES**

APRIL 29, 1976

Ordered to lie on the table and to be printed

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**AMENDMENT**

Intended to be proposed by Mr. DOMENICI to S. 3219, a bill to amend the Clean Air Act, as amended, viz:

- 1       On page 25, strike lines 3 through 7 and through “pur-  
2   pose.” on line 8, and insert in lieu thereof the following:  
3       “(7) (A) The implementation plan required by para-  
4   graph (3) of this subsection shall be prepared by an organi-  
5   zation of elected officials of local governments designated by  
6   agreement of the local governments in an affected area, and  
7   recognized by the State for this purpose. Where such an  
8   organization has not been designated by agreement within  
9   nine months after the enactment of the Clean Air Amend-  
10   ments of 1976, the Governor (or, in the case of an interstate  
11   area, Governors), after consultation with elected officials of

**Amdt. No. 1624**

- 1 local governments, shall designate an organization of elected
- 2 officials of local governments in the affected area to prepare
- 3 such plan.”.

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2D SESSION**S. 3219**

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IN THE SENATE OF THE UNITED STATES

APRIL 29, 1976

Ordered to lie on the table and to be printed

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**AMENDMENT**

Intended to be proposed by Mr. GARY HART (for himself and Mr. HASKELL) to S. 3219, a bill to amend the Clean Air Act, as amended, viz: On page 74, after line 10, insert the following new section and renumber succeeding sections accordingly:

1        SEC.        . Title II of the Clean Air Act is amended by  
2 redesignating section 214 as section 215 and by inserting  
3 the following new section after section 213:

4        "HIGH ALTITUDE PERFORMANCE ADJUSTMENTS

5        "SEC. 214. (a) Any action taken with respect to any  
6 element of design installed on or in a motor vehicle or motor  
7 vehicle engine in compliance with regulations under this title  
8 (including any alteration or adjustment of such element)  
9 shall not be treated as a violation of section 203 (a) (3) if

**Amdt. No. 1627**

1 such action is necessary to modify such vehicle or engine  
2 for adequate performance at high altitudes and is performed  
3 in accordance with instructions—

4 “(1) provided by the manufacturer and approved  
5 by the Administrator, or

6 “(2) promulgated by the Administrator.

7 No such instructions may be approved or promulgated by  
8 the Administrator unless he finds that the actions authorized  
9 pursuant to such instructions will insure emission control  
10 performance at least equivalent to that which would result if  
11 no such action were authorized. Such finding shall be based  
12 upon test data which the Administrator determines to be  
13 adequate with respect to such emission control performance.

14 “(b) Unless the manufacturer of a class or category of  
15 motor vehicles or motor vehicle engines publishes instruc-  
16 tions approved by the Administrator for purposes of sub-  
17 section (a) for such class or category and makes such  
18 instructions generally available to the public within six  
19 months after (1) the date on which such class or category  
20 first becomes available for sale to the general public, or (2)  
21 the date of enactment of the Clean Air Amendments of 1976,  
22 whichever occurs later, or unless he determines that he  
23 cannot make the finding required under subsection (a) with  
24 respect to such class or category, the Administrator shall,  
25 within eighteen months after such date, promulgate such  
26 instructions for such class or category.”.

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2D SESSION**S. 3219**

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IN THE SENATE OF THE UNITED STATES

APRIL 29, 1976

Ordered to lie on the table and to be printed

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**AMENDMENT**

Intended to be proposed by Mr. DOMENICI to S. 3219, a bill to amend the Clean Air Act, as amended, viz: On page 28, after line 17, insert:

- 1       (i) (1) The Administrator, within ninety days after the  
2 date of enactment of the Clean Air Act Amendments of  
3 1976 and from time to time thereafter as may be appro-  
4 priate, shall publish proposed regulations for use by the  
5 Environmental Protection Agency and State and local agen-  
6 cies, in (A) determining the portion of ambient concentra-  
7 tions of particulate matter attributable to natural causes; and  
8 (B) discounting such particulate matter, when deemed ap-  
9 propriate, in administering sections 107 (d), 110, and 113  
10 (g); and after a reasonable time for interested persons to

**Amdt. No. 1629**

1 submit written comments thereon (but no later than ninety  
2 days after the initial publication of the proposed regulations)  
3 shall promulgate such proposed regulations.

4 (2) For the purposes of this section "natural causes"  
5 shall include wind erosion of natural soils from farms, cleared  
6 land, and unpaved roads; dust storms; forest fires; sea salt  
7 and such other causes as may be specified by the Adminis-  
8 trator.

9 Section 307 (b) (1) of the Clean Air Act, as amended in  
10 1970, is further amended to add the phrase "any regulations  
11 under section 110 (i)," after the phrase "A petition for  
12 review of action of the Administrator in promulgating any  
13 national primary or secondary ambient air quality standard".

## AMENDMENT NO. 1629

Mr. DOMENICI. Mr. President, in the Record of Thursday, April 29, 1976, at page S 6171 there was printed a floor statement of mine submitting an amendment to the Clean Air Act dealing with background particulates. Unfortunately, the amendment was omitted from the Record.

The statement and amendment were ordered to be printed in the Record, as follows:

## STATEMENT OF MR. DOMENICI

I submit an amendment to the Clean Air Act Amendments of 1976. The amendment deals with the troubling issue of background particulates. The origin of the problem lies in the total suspended particulate standard of the present law. This standard is an imprecise one which makes no distinction between wind-blown dust and the more toxic emissions of powerplants and steel mills. The problem occasioned by the particulate standard's indiscriminate nature in the rural areas of the country may exceed the particulate standard because of phenomena such as duststorms. Such violations of the standard have the legal effect of putting these areas in the same air quality category as heavily industrialized urban areas. Section 113(g) of the present amendments puts additional constraints on growth in areas that violate the standards that, although proper for industrialized urban centers, are inappropriate for rural areas.

I should like to stress that the Public Works Committee is well aware of this problem. Page 81 of the committee report notes that the logical deficiencies of the particulate standard have been cured by the administrative good sense of State and Federal officials. My amendment would do no more than codify in law what is presently considered sound administrative practice. Accordingly, I consider my amendment as technical in nature.

## AMENDMENT 1629

On page 28, after line 17, insert:

"(i) (1) The Administrator within 90 days after the date of enactment of the Clean Air Act Amendments of 1976 and from time to time thereafter as may be appropriate, shall publish proposed regulations for use by the Environmental Protection Agency and State and local agencies, in (A) determining the portion of ambient concentrations of particulate matter attributable to natural causes; and (B) discounting such particulate matter, as may be deemed appropriate, for purposes of sections 107(d), 110, and 113(g); and after a reasonable time for interested persons to submit written comments thereon (but no later than 90 days after the initial publication of the proposed regulations) shall promulgate such proposed regulations.

"(2) For the purposes of this section 'natural causes' shall include wind erosion of natural soils from farms, cleared land, and unpaved roads; duststorms; forest fires; sea salt and such other causes as may be specified by the Administrator.

"Section 307(b)(1) of the Clean Air Act, as amended in 1970, is further amended to add the phrase 'any regulations under section 110(i),' after the phrase 'A petition for review of action of the Administrator in promulgating any national primary or secondary ambient air quality standard.'"

## AMENDMENT NO. 1644

Mr. HATFIELD. I am submitting an amendment to S. 3219, the Clean Air Act Amendments of 1976, which provides that national monuments in excess of 10,000 acres and which are managed as natural areas by the National Park Service, be designated as class I areas under section 6 of the bill. I am joined in this effort by my colleagues, Senator Gary Hart and Senator Haskell.

This amendment would give the Federal land manager a greater role in protecting the air quality of these regions unless the State and Federal Governments agree to a redesignation as class II. The bill, as written, provides that these areas be classified as class II unless the State and Federal Governments agree to a class I redesignation.

I ask that a list of the national monuments affected by this amendment be printed in the Record.

*National Monuments*

[Over 10,000 acres and managed as natural areas]

Alaska :	
Glacier Bay-----	2, 805, 269
Katmai -----	2, 792, 137
Arizona :	
Chiricahua -----	10, 648
Organ Pipe Cactus-----	330, 690
Saguaro -----	79, 988
California :	
Channel Islands-----	18, 384
Death Valley (Nevada)-----	2, 067, 966
Joshua Tree-----	559, 947
Lava Beds-----	46, 500
Pinnacles -----	14, 497
Colorado :	
Black Canyon of the Gunnison-----	13, 672
Colorado -----	17, 668
Dinosaur (Utah)-----	211, 050
Great Sand Dunes-----	36, 666
Florida : Biscayne-----	103, 701
Idaho : Craters of the Moon-----	53, 545
Nevada : Death Valley (California)-----	2, 067, 966
New Mexico : White Sands-----	145, 334
Oregon : John Day Fossil Beds-----	14, 405
South Dakota : Badlands-----	243, 302
Utah : Dinosaur (Colorado)-----	211, 050

Mr. HATFIELD. In submitting this amendment, it is our intention to extend the coverage of the "nondegradation" standard contained in S. 3219 to its next logical step. Passage of our amendment would include in the class I category such naturally beautiful land areas as the John Day Fossil Beds in my State of Oregon as well as Glacier Bay and Katmai in Alaska, Death Valley in California and Nevada, and the Badlands in South Dakota. Most of these areas are every bit as beautiful and valuable in their natural state as our national parks and national wilderness areas, but have not been granted national park or wilderness status by the Congress as required by law.

I ask that our amendment be printed in the Record.

AMENDMENT No. 1644

On page 11, line 25, insert after "of 1976", the following: "and each national monument which exceeds ten thousand acres in size and which was established or is managed to preserve natural areas,"

Calendar No. 685

94TH CONGRESS  
2D SESSION**S. 3219**

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IN THE SENATE OF THE UNITED STATES

MAY 12, 1976

Ordered to lie on the table and to be printed

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**AMENDMENT**

Intended to be proposed by Mr. HATFIELD (for himself, Mr. GARY HART, and Mr. HASKELL) to S. 3219, a bill to amend the Clean Air Act, as amended, viz:

- 1       On page 11, line 25, insert after "of 1976," the follow-  
2 ing: "and each national monument which exceeds ten  
3 thousand acres in size and which was established or is  
4 managed to preserve natural areas,".

**Amdt. No. 1644**

Calendar No. 830

94TH CONGRESS  
2D SESSION**S. 3438**

[Report No. 94-873]

## IN THE SENATE OF THE UNITED STATES

MAY 13, 1976

Mr. RANDOLPH, from the Committee on Public Works, reported the following bill; which was read twice and ordered to be placed on the calendar

**A BILL**

To amend the Clean Air Act to authorize appropriations for research, development, and demonstration.

- 1       *Be it enacted by the Senate and House of Representa-*  
 2       *tives of the United States of America in Congress assembled,*  
 3       That section 104 (c) of the Clean Air Act is amended by  
 4       striking the period at the end of the first sentence and add-  
 5       ing the following: “, and \$148,194,700 for the fiscal year  
 6       ending September 30, 1977.”.

## AMENDMENT NO. 1656

Mr. MUSKIE. Mr. President, there is apparently some doubt in some quarters as to my views on the pending clean air legislation. I introduced the committee bill. My name appears on the committee report. I support this legislation. I am prepared to take this bill to conference and I am prepared to work for equitable resolution of the differences between the House and the Senate.

As chairman of the Senate Subcommittee on Environmental Pollution, I consider this a responsibility and an obligation. As I said in my supplemental views on this legislation, however, there are aspects of this legislation which I opposed in committee and there are provisions which I offered in committee which were not adopted. I continue to hold that view. I would prefer a different bill, broader in some respects and narrow in others.

What apparently has not been understood, however, is that I think the Clean Air Act as it was enacted in 1970 is basically sound law. Throughout 1975 as the Subcommittee on Environmental Pollution held hearings, the evidence presented supported that judgment. As those hearings developed, as issues were discussed, as amendments were proposed, I inquired as to whether or not the law really needed amending, whether amendments were being proposed as a means of clarifying the intent of Congress in providing guidance to the Administrator. A number of witnesses supported amendments to the act. A number of people think certain amendments are desirable to improve implementation of the act.

However, this only suggests amendments may be desirable, not essential. In my opinion, with one exception, the judicial and the administrative processes are available to overcome any hurdles which may be presented by the act in its present form. In 1970 and repeatedly since 1970, I have indicated a willingness to review and, if necessary, revise any of the statutory automobile emission standards. I proposed an amendment this year to fulfill that commitment. I suggested in committee that scientific evidence, technical data supported a relaxation of the standard for oxides of nitrogen emissions from automobiles from 0.4 per mile to 1.0 grams per mile. I am convinced that a modification of the NO<sub>x</sub> standard is the only necessary change in the Clean Air Act other than the addition of new funding authority.

I think the courts and the Administrator can resolve the nondegradation issue. I think the statutory base and the legislative history of the Clean Air Act adequately support the requirement that there be a national nondegradation policy. I think the courts will uphold the statutory requirement and the legislative history, and I think the Administrator will eventually develop a set of regulations which meet criteria established by the courts.

I think the courts have the capability to monitor changes in current policies relative to achieving primary standards in areas where auto emission standards alone are an inadequate control mechanism and to provide the necessary flexibility so that transportation control requirements are not unduly inflexible and restrictive.

I think that EPA and the courts are capable, through the use of injunctions and criminal penalties, to enforce the deadlines in the Clean Air Act for stationary sources. These things can happen without any amendments this year.

Therefore, in order to underscore my commitment and to indicate again the scope of amendments that I feel are necessary, I am today submitting an amendment to S. 3219, the effect of which would be to strike the committee bill in its entirety, substitute a 1.0 gram per mile  $\text{NO}_x$  standard as the statutory  $\text{NO}_x$  standard and establish authorizations for clean Air Act programs for fiscal year 1977, 1978 and 1979.

I have not finally concluded as to whether or not I will offer this amendment. But we have an obligation to the auto industry to finalize the question of emission standards.

The committee tried to discharge its responsibility concerning the major policy questions of the Clean Air Act. Should the Senate deem that response inadequate, then I will propose my amendment as a means of resolving the issue.

Calendar No. 685

94TH CONGRESS  
2D SESSION**S. 3219**

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IN THE SENATE OF THE UNITED STATES

MAY 19, 1976

Ordered to lie on the table and to be printed

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**AMENDMENT**

Intended to be proposed by Mr. MUSKIE to S. 3219, a bill to amend the Clean Air Act, as amended, viz: Strike all after the enacting clause and insert in lieu thereof the following:

1       SECTION 1. (a) Subparagraph (B) of paragraph (1)  
2 of section 202 (b) of the Clean Air Act is amended to read  
3 as follows:

4       “(B) The regulations under subsection (a) applicable  
5 to emissions of oxides of nitrogen from light duty vehicles  
6 and engines manufactured during (i) model year 1976 shall  
7 contain standards which provide that such emissions from  
8 such vehicles and engines may not exceed 3.1 grams per  
9 vehicle mile, (ii) model year 1977 shall contain standards  
10 which provide that such emissions from such vehicles and

**Amdt. No. 1656**

1 engines may not exceed 2.0 grams per vehicle mile, and  
2 (iii) model year 1978 and thereafter shall contain standards  
3 which provide that such emissions from such vehicles and  
4 engines may not exceed 1.0 grams per vehicle mile.”.

5 (b) Section 316 of the Clean Air Act is amended to  
6 read as follows:

7 “AUTHORIZATION OF APPROPRIATIONS

8 “SEC. 316. There are authorized to be appropriated to  
9 carry out this Act, other than sections 103, (f) (3) and (d),  
10 104, 212, 315, and 403, not to exceed \$300,000,000 for the  
11 fiscal year ending June 30, 1976, \$75,000,000 for the transi-  
12 tion period ending September 30, 1976, and \$300,000,000  
13 for each of fiscal years 1977, 1978, and 1979.”.

Calendar No. 685

94TH CONGRESS  
2D SESSION**S. 3219**

IN THE SENATE OF THE UNITED STATES

JUNE 9 (legislative day, JUNE 3), 1976

Ordered to lie on the table and to be printed

**AMENDMENTS**

Intended to be proposed by Mr. RANDOLPH to S. 3219, a bill  
to amend the Clean Air Act, as amended, viz:

1       On page 85, line 13, insert the following: between the  
2 words "and" and "prevention" the words "in accordance  
3 with subsection (i) of this section the".

4       On page 86, line 8, insert between the words "Com-  
5 mission" and "shall" the words "shall be appointed within  
6 sixty days after enactment of this section and".

7       On page 87, line 4, insert after the word "(e)" the  
8 following phrase: "(1) Except as provided in paragraph  
9 (2) of this subsection,".

10       On page 87, between lines 7 and 8, insert the following  
11 new paragraph:

**Amdt. No. 1798**

1       “(2) A report on the results of the study and investi-  
2 gation of the Commission authorized under subsection (i)  
3 of this section, together with any appropriate recommenda-  
4 tions, shall be submitted not later than two years after the  
5 date of enactment of this section.”.

6       On page 88, between lines 2 and 3, insert the following  
7 new subsection:

8       “(i) (1) The Commission shall, in carrying out the  
9 study authorized under this section, give priority to a study  
10 of the implementation of the provisions of subsection (g) of  
11 section 110 of this Act.

12       “(2) In carrying out the authority of this subsection  
13 the Commission shall study, among others, the following:

14           “(A) whether the provisions relating to the des-  
15 ignation of, and protection of air quality in class I  
16 regions under this Act are appropriate to protect the air  
17 quality over lands of special national significance, in-  
18 cluding recommendations for, and methods to (i) add to  
19 or delete lands from such designation, and (ii) provide  
20 appropriate protection of the air quality over such  
21 lands;

22           “(B) whether the provisions of subsection (g) of  
23 section 110 of this Act, including the three-hour and  
24 twenty-four-hour increments, (i) affect the location and  
25 size of major emitting facilities, and (ii) whether such

1 effects are in conflict or consonance with other national  
2 policies regarding the development of such facilities;

3 “(C) whether the technology is available to con-  
4 trol emissions from the major emitting facilities which  
5 are subject to regulation under subsection (g) of sec-  
6 tion 110 of this Act, including an analysis of the costs as-  
7 sociated with that technology;

8 “(D) whether the exclusion of nonmajor emitting  
9 sources from the regulatory framework under this Act  
10 will affect the protection of air quality in class I and class  
11 II regions designated under this Act;

12 “(E) whether the increments of change of air  
13 quality under this Act are appropriate to prevent signifi-  
14 cant deterioration of air quality in class I and class II  
15 regions designated under this Act; and

16 “(F) whether the choice of predictive air quality  
17 models and the assumptions of those models are ap-  
18 propriate to protect air quality in the class I and class II  
19 regions designated under this Act for the pollutants sub-  
20 ject to regulation under subsection (g) of section 110  
21 of this Act.

22 “(3) For the study authorized under this subsection  
23 there shall be made available by contract to the Commission  
24 from the appropriation to the Environmental Protection  
25 Agency for fiscal year 1977 the sum of \$1,000,000.”.

Calendar No. 685

94TH CONGRESS  
2D SESSION**S. 3219**

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IN THE SENATE OF THE UNITED STATES

JUNE 9 (legislative day, JUNE 3), 1976

Ordered to lie on the table and to be printed

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**AMENDMENTS**

Intended to be proposed by Mr. RANDOLPH to S. 3219, a bill  
to amend the Clean Air Act, as amended, viz:

1 On page 45, line 12, insert the following new section  
2 and renumber subsequent sections accordingly:

3 "SEC. 12. Section 113 of the Clean Air Act is amended  
4 by adding the following new subsection:

5 "“(h) The Administrator, when enforcing the provisions  
6 of an implementation plan applicable to a major emitting  
7 facility, shall enforce only those provisions of such plan  
8 which provide for the imposition of emission limitations and  
9 schedules and timetables for compliance with such limita-  
10 tions.’”.

11 On page 77, line 12, strike the period and insert the  
Amdt. No. 1799

1 following: “: *Provided, however,* That emission limitations  
2 and schedules and timetables for compliance with such limita-  
3 tions shall not be construed to include those provisions of an  
4 implementation plan with respect to opacity requirements or  
5 limitations on visible emissions, for major emitting facilities:  
6 *Provided further,* That nothing herein shall be construed to  
7 preclude a State or local air pollution control agency from  
8 enforcing opacity requirements or limitations on visible emis-  
9 sions for any stationary source, nor the Administrator, if  
10 requested by the Governor of such State, from enforcing  
11 such requirements or limitations for any major emitting  
12 facility.”.

Calendar No. 685

94TH CONGRESS  
2D SESSION**S. 3219**

IN THE SENATE OF THE UNITED STATES

JULY 21, 1976

Ordered to lie on the table and to be printed

**AMENDMENT**

Intended to be proposed by Mr. WILLIAMS (for himself and Mr. CASE) to S. 3219, a bill to amend the Clean Air Act, as amended, viz: On page 28, after line 7, insert a new section as follows, and renumber succeeding sections:

- 1        SEC. 8. (a) Section 111 (b) (1) of the Clean Air Act
- 2 is amended by adding the following new subparagraph:
- 3        ““(C) A Governor may petition the Administrator to
- 4 include in a revision of the list required under subparagraph
- 5 (A) of this paragraph a category of stationary sources which
- 6 emit air pollutants the State is required to regulate under
- 7 section 110 of this Act. The Administrator, within 120 days
- 8 after such petition (or such longer period as agreed by the
- 9 Administrator and the Governor), shall publish a revised
- 10 list in accordance with the petition or a notice that he
- 11 declines to do so. If the Administrator declines to include

**Amdt. No. 2052**

1 such category of stationary sources in a revision of the list  
2 under subparagraph (A), the Administrator shall publish  
3 his justification for so doing, including a statement of what  
4 additional resources would be necessary if the refusal is based  
5 in whole or in part on the inadequacy of Agency resources  
6 to develop or implement standards of performance for such  
7 category.'”.

8 (b) Section 112(b) (1) of the Clean Air Act is  
9 amended by adding the following new subparagraph:

10 ““(D) A Governor may petition the Administrator to  
11 include in a revision of the list required under subparagraph  
12 (A) of this paragraph an air pollutant he believes to be a  
13 hazardous air pollutant. The Administrator, within 120 days  
14 after such petition (or such longer period as agreed by the  
15 Administrator and the Governor), shall publish a revised list  
16 in accordance with the petition or a notice that he declines  
17 to do so. If the Administrator declines to include such air  
18 pollutant in a revision of the list of hazardous air pollutants  
19 under subparagraph (A), the Administrator shall publish  
20 his justification for so doing, including a statement of what  
21 additional resources would be necessary if the refusal is based  
22 in whole or in part on the inadequacy of Agency resources  
23 to develop or implement emission standards for such haz-  
24 ardous air pollutant.’”.

1       (c) The first sentence of section 307 (b) (1) of the  
2 Clean Air Act is amended by inserting "any refusal of the  
3 Administrator under section 111 (b) (1) (C) or section 112  
4 (b) (1) (D)," after "section 111,".

Calendar No. 685

94TH CONGRESS  
2D SESSION**S. 3219**

IN THE SENATE OF THE UNITED STATES

JULY 22, 1976

Ordered to lie on the table and to be printed

**AMENDMENTS**

Intended to be proposed by Mr. TOWER to S. 3219, a bill to amend the Clean Air Act, as amended, viz:

- 1       On page 71, line 20, strike the period after "section"  
2   and insert in lieu thereof a comma and the following: "nor  
3   shall any such warranty be invalid on the basis of the instal-  
4   lation or use of any air-conditioning system not installed in  
5   the factory of the vehicle manufacturer, where the particular  
6   vehicle or engine in which such air-conditioning system is  
7   installed is certified in accordance with section 206(a) (3)  
8   with an allowance for air-conditioning or similar equipment  
9   to be subsequently installed."
- 10       On page 70, line 4, insert "(a)" after "SEC. 26."
- 11       On page 70, after line 12, insert the following new  
12   subsection:

**Amdt. No. 2063**

1       “(b) Section 206 (a) of the Clean Air Act is amended  
2 by adding the following new paragraph:

3       “(3) Each new motor vehicle or new motor vehicle  
4 engine shall be certified to conform to the regulations pre-  
5 scribed under section 202 of this Act for the particular vehicle  
6 configuration, anticipated use pattern, and equipment of such  
7 vehicle or engine. The Administrator shall certify each vehi-  
8 cle or engine with an allowance to assure conformity with  
9 such regulations for air-conditioning or similar equipment  
10 to be subsequently installed. Such vehicle or engine shall be  
11 deemed to be covered by a certificate of conformity only if  
12 no equipment is added or other modification made which  
13 is not within the allowance provided for in this paragraph.’.”

Mr. NELSON. An amendment that I am submitting to the Clean Air Amendments of 1976 would ban, effective January 1, 1977, aerosol spray containers containing specific fluorocarbons known to be harmful to the atmosphere, unless the EPA finds that their continued use poses no unreasonable risk of injury to health or the environment.

Some 55 studies have been, or are being conducted, which indicate that specific fluorocarbons deplete the ozone layer in the upper stratosphere, thereby reducing the protection to the Earth from dangerous ultra-violet radiation.

The National Academy of Sciences Committee on the Impact of Stratospheric Change, which has been studying the subject for several years, has prepared a report, recommending that nonessential uses of fluorocarbons in aerosol spray cans be eliminated, according to a panel member as reported in the Philadelphia Inquirer, March 19, 1976, and Business Week, April 5, 1976. The NAS study, due in August, 1976, involves participation by four agencies: NSF, EPA, NOAA, and NASA.

Here are the facts, as scientists have concluded:

Erosion of the ozone layer can cause increases in the incidence of skin cancer and mutation of plant life.

A petition filed by 10 States, the Natural Resources Defense Council, Inc., and Environmental Defense Fund, Inc., seeks to have Consumer Product Safety Commission declare that pressurized consumer products containing certain fluorocarbon propellants be banned as hazardous. The States participating in the petition are: Minnesota, New York, Michigan, Oregon, Wisconsin, New Hampshire, Colorado, Florida, Vermont, and Massachusetts. I ask unanimous consent that a Wall Street Journal article describing the petition be printed in the Record following these remarks.

The petition cites the following dangers:

A report of the Federal Task Force on Inadvertent Modification of the Stratosphere, "Fluorocarbons and the Environment," June 1975—IMOS Report—says that current estimates indicate that even without further growth in fluorocarbon use above the 1972 level the eventual equilibrium reduction of ozone would be about 7 percent. If the use of fluorocarbons continues to grow at the rate at which it grew during the 1960's a reduction of between 10 percent and 15 percent will occur early in the next century.

A 7 percent reduction in the ozone content of the stratosphere will cause an additional 42,000 to 140,000 cases of skin cancer each year in the United States, and an additional 126,000 to 420,000 cases worldwide. A 15 percent reduction will cause an additional 90,000 to 300,000 cases of skin cancer each year in the United States and an additional 270,000 to 900,000 cases worldwide, the petition contends, based on the IMOS study.

Even if no additional fluorocarbons are released, further reduction in the average concentrations of ozone would continue, reaching a maximum in about a decade. The naturally occurring ozone formation necessary to counter this decrease would take at least a century or more, the IMOS Report concludes.

New laboratory and atmospheric measurements of the key chemical reactions and their rates have led to refinements and downward revisions of the expected amounts of ozone reduction, the petition notes. However, the petition points out that other new measurements have led to upward revisions of the estimates. The petition states—page 27:

The net result of the new information, taken as a whole, is that the overall estimates of ozone reduction are approximately the same as those of more than a year ago.

It concludes—pages 27-29:

At the same time, the new estimates are fortified by stronger experimental data than were available for the earlier estimates.

Climatic changes may result from fluorocarbon influence on the Earth's temperature.

According to information in the petition—page 36-7—studies by Dr. V. Ramanathan of the Langley Research Center of the National Aeronautical and Space Administration—NASA—indicate that in the cool temperatures in the lower atmosphere, fluorocarbon molecules absorb heat radiation from the Earth's surface and trap a substantial portion of it. This results in a "greenhouse effect" that may warm the Earth enough to cause significant climatic changes with respect to rainfall ice-cover and a partial melting of the polar ice caps.

Approximately 50 percent of all world use of pressurized products containing these ozone-depleting fluorocarbons and similar compounds as propellants is by U.S. consumers.

A recent Arthur D. Little study, contracted by the Environmental Protection Agency—EPA—says that aerosols account for about 62 percent of the fluorocarbons released into the atmosphere, with refrigerants—enclosed uses—leaking about 25 percent. The remaining 13 percent of fluorocarbons are used in both enclosed and nonenclosed ways, such as in solvents and as foam-blowing agents to make plastic products.

Alternatives to aerosols and alternative propellants that are not known to harm the ozone layer exist, and new ones are being developed by the aerosol industry. In fact, many manufacturers of consumer products that have been using aerosol sprays now are advertising and promoting nonaerosol containers. S. C. Johnson and Son of Racine, Wis., manufacturers of wax products, have ended the use of fluorocarbon propellants in the production of its broad line of consumer products.

The EPA has recommended that pesticides be packed in nonaerosol containers.

FDA Commissioner Alexander M. Schmidt, M.D., in an interview with U.S. News & World Report, Inc., February 23, 1976—pages 52-55—cited "fluorocarbons as a spray propellant" as an example of products that need to be removed from the market because of "a very strong suspicion rather than absolute proof" of risk to humans. He states:

We already have banned use of vinyl chloride in aerosols because of the cancer risk. Now there is a theory that fluorocarbons may destroy the ozone layer in our atmosphere that filters out ultraviolet light. The fear is that the result may be an increase in skin cancer.

There are quite a bit of data that show this thesis is correct. I don't think we can afford to wait a decade or two decades for incontrovertible proof that the

ozone is disappearing. The National Academy of Sciences is studying the available evidence now. We will have their report within the next year, and will then make a decision.

Finally, retail prices of nonaerosols are less costly to consumers. An article by Sidney Margolius in the *Washington Star*, February 14, 1976, notes the comparative lesser costs of nonaerosol consumer products.

What the Nelson amendment does; how it differs from the Public Works Committee recommended bill on stratospheric ozone protection—section 153—and from the Packwood aerosol amendment:

#### Banning propellants:

Nelson amendment—bans, effective January 1, 1977, the manufacture, production, importation, export or sale of aerosol containers containing as propellants "trichloromonofluoromethane, difluorodichloromethane, or any other saturated chlorofluorocarbon compound not containing hydrogen," unless the EPA prior to that date, finds that such substances pose no unreasonable risk of injury to health or the environment.

This is similar to a law enacted in the State of Oregon May 23, 1975, except that the Oregon law is effective March 1, 1977.

It is also comparable to an amendment phasing out PCB's, which the Senate passed as part of the Toxic Substances Control Act, March 26, 1976 (Congressional Record, p. S4407).

This effectively bans products containing the fluorocarbon propellants known to cause ozone depletion, specifically those compounds identified chemically as P-11 (trichlorofluoromethane), P-12 (dichlorodifluoromethane), and other fluorocarbon compounds with similar physical and chemical properties (such as P-114, dichlorotetrafluoroethane) that are chemically inert and do not contain reactive bonds or unsaturated bonds, unless they are found not to pose unreasonable risks.

It is our understanding that compounds that do not contain unsaturated bonds and do not contain hydrogen bonds appear to be chemically stable and do not break down in the lower atmosphere, and therefore are most likely to drift into the stratosphere, where they break down and form chlorine atoms, which in turn react with ozone and reduce its concentration in the stratosphere.

The committee bill (part B—Ozone Protection, sec. 15)—Does not mandate a ban of such aerosol containers. It authorizes the EPA to propose by January 1, 1978, regulations to restrict the manufacture and use of aerosols containing halocarbons—a much larger family of fluorocarbons than the Nelson amendment bans—if the EPA finds that "halocarbon emissions from aerosol containers may reasonably be anticipated to cause or contribute to the endangerment of public health or welfare" (p. 58 of S. 3219 as reported Mar. 29, 1976). Such proposals would be submitted to Congress by April 1, 1978, and after public hearings, the EPA shall promulgate final regulations, which shall take effect if not disapproved by either House within 90 days.

In other words, the committee bill: First, does not ban the specific fluorocarbons known to deplete the ozone layer unless the EPA finds that they or other halocarbons "may reasonably be anticipated to endanger public health," and second, not until July 1978—some 1½ years after the Nelson amendment would become effective.

The committee bill does contain an "Expedited Regulation" provision—section 154, page 59—which authorizes EPA to take immediate action to ban or restrict the manufacture, production, sale, import, export, or use of aerosol containers discharging halocarbons into the atmosphere, if it is "necessary to protect the public health or welfare from significant risk of harmful effects which may reasonably be anticipated to arise in whole or in part from" such emissions.

This provision of the committee bill also requires the administration, in promulgating any expedited regulations for a ban, to take into account the public need for aerosol containers, the costs and feasibility of such action, and all other costs related to depletion of stratospheric ozone.

My amendment would not affect this provision, which I support.

My amendment also would not affect the committee bill's provision authorizing EPA to propose regulations to control halocarbon emissions from other sources than aerosols if necessary to protect the public health.

The Packwood amendment—bans effective January 1, 1978—1 year after the Nelson amendment is effective—the manufacture, production, import or export of aerosol containers containing halocarbons—like with committee bill with respect to halocarbons affected but broader than the Nelson amendment, which affects specific fluorocarbons.

EPA may lift or modify the ban if it "finds that no significant risk to the public health, safety, or welfare is, or may be posed by the discharge of halocarbons into the ambient air from aerosol containers." The burden of proof is on the agency to find "no significant risk before lifting the ban."

Congressional review and lifting or modifying a ban:

Nelson amendment—shifts the burden of proof to petitioners, and allows for lifting or modifying the mandated ban only: First, after petitions have been presented to EPA, based on "new scientific evidence showing that such change in the prohibition presents no unreasonable risk to the public health, safety or welfare" resulting from the discharge of the specifically banned fluorocarbons into the ambient air; second, after EPA has considered the new evidence, consulted with experts and Federal agencies, and afforded the opportunity for a public hearing; and third, after both Houses of Congress have approved the changes recommended by EPA within 90 days of its proposal.

The criteria for a new finding is that there be "no unreasonable risk" rather than "no significant risk" to the public health, as the committee and Packwood amendments require. This criteria is similar to language in the Medical Devices Safety Act with respect to basis for changing device classifications, as recently enacted into law; and to the PCBS amendment passed by the Senate.

Committee bill—allows a change in a ban if either House does not disapprove within 90 days.

Packwood amendment—does not contain congressional review.

Exemptions:

Nelson and Packwood amendments—both contain provisions allowing EPA to grant specific exemptions from a ban, for the use of small quantities of the banned substances, if such aerosol containers are essential for the public health or welfare—such as medical devices—and adequate substitutes for the banned substances are not available, except that the Nelson amendment goes only to its limited banned fluo-

rocarbons, while the Packwood amendment addresses all halocarbon-containing aerosols.

Committee bill—does not contain such exemptions.

Provisions in Nelson amendment not in committee on Packwood amendments:

Prohibition against stockpiling, identical to that in the Consumer Product Safety Act.

Specifies that this act shall not preempt existing authority to regulate aerosols in the Consumer Product Safety Act—also in Packwood amendment—the Food, Drug and Cosmetic Act, or any other act.

To summarize the basic differences: the Nelson amendment limits the ban, but mandates it sooner than the other amendments, and makes it incumbent on Congress to lift or modify such ban by affirmative action.

The Nelson amendment does not ban all aerosols—only those containing propellants which scientific evidence has identified as harmful to the ozone layer, and thus to human health and the environment.

The amendment has the support of several environmental organizations, including the Natural Resources Defense Council, Inc., and the Center for Science in the Public Interest, which responded to our request for comment on the amendment. They have also endorsed the Packwood amendment, with the qualification that they preferred an earlier ban, and stronger measure.

#### AMENDMENT No. 2078 [See sec. 155]

On page 58, beginning with line 2, strike out all through line 7 on page 59 and insert in lieu thereof the following:

"Sec. 153. On and after January 1, 1977, except as provided in subsections (b) and (c), it shall be unlawful for any person, to manufacture, produce, import, export to or from the United States, or sell in commerce any aerosol container as a propellant trichloromonofluoromethane, difluorodichloromethane or any other saturated chlorofluorocarbon compound not containing hydrogen, unless the Administrator finds prior to such date, on the basis of a study by the National Academy of Science and other available scientific information, that no unreasonable risk to the public health or the environment results from the use of such containers.

"(b) (1) Any person may petition the Administrator to modify or rescind the prohibition in subsection (a) in whole or in part, by presenting new scientific evidence showing that such change in the prohibition presents no unreasonable risk to the public health, safety, or welfare posed by the discharge of trichloromonofluoromethane, difluorochloromethane or any other saturated chlorofluorocarbon compound not containing hydrogen into the ambient air from aerosol containers.

"(2) In determining whether to modify or rescind such prohibition pursuant to subsection (a), the Administrator shall consider new scientific information, available reports, and any other material as he deems necessary, and consult with appropriate Federal agencies and scientific entities, and afford the opportunity.

"(3) If he then finds that no unreasonable risk to the public health, safety or welfare is, or may be, posed by the discharge of trichloromonofluoromethane, difluorodichloromethane or any other saturated chlorofluorocarbon compound not containing hydrogen into the ambient air from aerosol containers, he may propose by rule to modify or rescind the prohibition in subsection (a) in whole or in part, consistent with that finding, and shall submit such rule to Congress, which rule shall not take effect unless approved by a joint resolution of Congress within 90 calendar days.

"(c) If the Administrator determines that a particular use of trichloromonofluoromethane, difluorodichloromethane or any other saturated chlorofluorocarbon compound not containing hydrogen in aerosol containers is essential for the public health or welfare, and that an adequate substitute for such compound

is not available, he may grant exemptions from the prohibitions in subsection (a) to allow the use of small quantities in such particular case.

"(d) The Administrator shall by rule prohibit manufacturers or importers of aerosol containers containing trichloromonofluoromethane, difluorodichloromethane or any other saturated chlorofluorocarbon compound not containing hydrogen from stockpiling (within the meaning of section 9(d)(2) of the Consumer Product Safety Act (15 U.S.C. 2058(d)(2)) any such containers so as to prevent such manufacturers or importers from circumventing the purpose of this section.

"(e)(1) From time to time the Administrator may revise any regulations issued pursuant to subsection (b)(3) of this section in light of new evidence as to the need for such regulations, subject to approval by the Congress as provided in such subsection (b)(3).

"(2) From time to time the Administrator may revise any of the regulations issued pursuant to subsection (c) and (d) of this section in the light of new evidence as to the need for such regulations.

"(f) Nothing in this section shall limit, restrict, or otherwise detract from the authority provided in section 154, or any authority vested in the Consumer Product Safety Commission, or any health-related authority vested in the Secretary of Health, Education, and Welfare.

On page 59, line 10, strike "1978" and insert in lieu thereof "1977".

**S. 3219**

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IN THE SENATE OF THE UNITED STATES

JULY 27, 1976

Ordered to lie on the table and to be printed

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**AMENDMENTS**

Intended to be proposed by Mr. INOUE (for himself and Mr. FONG) to S. 3219, a bill to amend the Clean Air Act, as amended, viz:

1       On page 77, line 6, insert "(a)" immediately follow-  
2 ing "SEC. 33."

3       On page 79, after line 13, insert the following new  
4 subsection:

5       "(b) Section 302(d) of the Clean Air Act is  
6 amended—

7       "(1) by striking out the word 'and' immediately  
8 preceding 'American Samoa';

9       "(2) by striking the period immediately follow-  
10 ing 'American Samoa' and inserting in lieu thereof '  
11 and the Trust Territory of the Pacific Islands.'".

**Amdt. No. 2088**

Calendar No. 685

94TH CONGRESS  
2D SESSION**S. 3219**

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IN THE SENATE OF THE UNITED STATES

JULY 27, 1976

Ordered to lie on the table and to be printed

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**AMENDMENT**

Intended to be proposed by Mr. ALLEN (to the amendment numbered 1798) to S. 3219, a bill to amend the Clean Air Act, as amended, viz:

- 1       On page 2, line 4, insert the words "not earlier than one
- 2   year and" between the words "be submitted" and the words
- 3   "not later than".

**Amdt. No. 2091**

Calendar No. 685

94TH CONGRESS  
2D SESSION**S. 3219**

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IN THE SENATE OF THE UNITED STATES

JULY 27, 1976

Ordered to lie on the table and to be printed

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**AMENDMENT**

Intended to be proposed by Mr. ALLEN (to the amendment numbered 1798) to S. 3219, a bill to amend the Clean Air Act, as amended, viz:

- 1       On page 2, line 11, strike the period and insert a semi-  
2 colon and add the following: "none of which provisions  
3 shall be implemented or enforced until a period of one year  
4 shall have elapsed from the date on which the Commission  
5 submits the report required of it on the results of its study  
6 and investigation."

**Amdt. No. 2092**

Calendar No. 685

94TH CONGRESS  
2D SESSION**S. 3219**

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IN THE SENATE OF THE UNITED STATES

JULY 28, 1976

Ordered to lie on the table and to be printed

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**AMENDMENT**

Intended to be proposed by Mr. WILLIAM L. SCOTT to the amendment (numbered 1598) proposed by Mr. MOSS and others to S. 3219, a bill to amend the Clean Air Act, as amended, viz: On the first page, line 2, of such amendment, strike out "and renumber succeeding sections accordingly" and insert in lieu thereof the following: "and on page 11, line 9, of the bill in lieu of such section 6 insert the following:

- 1       "SEC. 6. During the one-year period following the date  
2 of enactment of this Act nothing in the Clean Air Act shall  
3 be construed to require or provide for the establishment of  
4 standards more stringent than primary and secondary air  
5 quality standards.'".

**Amdt. No. 2102**

**S. 3219**

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**IN THE SENATE OF THE UNITED STATES**

AUGUST 2, 1976

Ordered to lie on the table and to be printed

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**AMENDMENTS**

Intended to be proposed by Mr. MCINTYRE to S. 3219, a bill  
to amend the Clean Air Act, as amended, viz:

1       On page 73, line 21, after "SEC. 31." insert "(a)".

2       On page 74, between lines 10 and 11, insert the  
3 following:

4       “(b) Notwithstanding any other provision of law, the  
5 Administrator of the Federal Energy Administration shall  
6 not exercise any authority to terminate allocation or price  
7 controls on gasoline until at least thirty days after the Ad-  
8 ministrator of the Environmental Protection Agency has  
9 submitted to Congress a study of the effects on the supply  
10 of all grades and types of gasoline sold to the public in all  
11 areas of the country resulting from all regulations prescribed

**Amdt. No. 2129**

- 1 by the Administrator of the Environmental Protection
- 2 Agency with respect to the lead content of gasoline.”.

## PRESIDENT'S MESSAGE, MAY 28, 1976

### CLEAN AIR ACT AMENDMENTS

MR. GARN. Within a very few days, it is likely that we will be debating on the floor of the Senate legislation amending the present Clean Air Act. There has been a great deal of uncertainty over these amendments, and their actual impact on the Nation. Part of that uncertainty has stemmed from the fact that different parts of the administration have taken somewhat independent lines with respect to the proposed amendments.

Many of us have urged the President to come out clearly with a position on the bill, giving us the best interpretation or synthesis of how the bill would affect the different functions for which the Federal Government has responsibility. I am happy to announce that President Ford has now announced, in a letter to the chairman of the House Committee on Interstate and Foreign Commerce, a clearcut position with respect to the bills now before the Senate and the House of Representatives. The President is clearly worried that there are large areas of uncertainty that could be greatly reduced if we had more information, particularly in the area of significant deterioration of air quality.

I ask unanimous consent that the President's letter be printed in the Record.

THE WHITE HOUSE,  
Washington, D.C., May 28, 1976.

HON. HARLEY O. STAGGERS,  
*Chairman, Interstate and Foreign Commerce Committee, House of Representatives, Washington, D.C.*

DEAR MR. CHAIRMAN: Both Houses of the Congress will soon consider amendments to the Clean Air Act of 1970. There are several sections of both the Senate and House amendments, as reported out of the respective committees, that I find disturbing. Specifically, I have serious reservations concerning the amendments dealing with auto emissions standards and prevention of significant deterioration.

In January 1975, I recommended that the Congress modify provisions of the Clean Air Act of 1970 related to automobile emissions. This position in part reflected the fact that auto emissions for 1976 model autos have been reduced by 83% compared to uncontrolled pre-1968 emission levels (with the exception of nitrogen oxides). Further reductions would be increasingly costly to the consumer and would involve decreases in fuel efficiency.

The Senate and House amendments, as presently written, fail to strike the proper balance between energy, environmental and economic needs. Therefore, I am announcing my support for an amendment to be cosponsored by Congressman John Dingell and Congressman James Broyhill, which reflects the position recommended by Russell Train, Administrator of the U.S. Environmental Protection Agency. This amendment would provide for stability of emissions standards over the next three years, imposing stricter standards for two years thereafter. Furthermore, a recent study by the Environmental Protection Agency, the Department of Transportation and the Federal Energy Administration indicates that the Dingell-Broyhill Amendment, relative to the Senate and House positions, would result in consumer cost savings of billions of dollars and fuel savings of billions of gallons. Resulting air quality differences would be negligible. I believe the Dingell-Broyhill Amendment at this point best balances the critical considerations of energy, economics and environment.

I am also concerned about the potential impact of the sections of the Senate and House Committee Amendments that deal with the prevention of significant deterioration of air quality. In January 1975, I asked the Congress to clarify their intent by eliminating significant deterioration provisions. As the respective Amendments are now written, greater economic uncertainties concerning job creation and capital formation would be created. Additionally, the impact on future energy resource development might well be negative. While I applaud the efforts of your committee in attempting to clarify this difficult issue, the uncertainties of the suggested changes are disturbing. I have asked the Environmental Protection Agency to supply me with the results of impact studies showing the effect of such changes on various industries. I am not satisfied that the very preliminary work of that Agency is sufficient evidence on which to decide this critical issue. We do not have the facts necessary to make proper decisions.

In view of the potentially disastrous effects on unemployment and on energy development, I cannot endorse the changes recommended by the respective House and Senate Committees. Accordingly, I believe the most appropriate course of action would be to amend the Act to preclude application of all significant deterioration provisions until sufficient information concerning final impact can be gathered.

The Nation is making progress towards reaching its environmental goals. As we continue to clean up our air and water, we must be careful not to retard our efforts at energy independence and economic recovery. Given the uncertainties created by the Clean Air Amendments, I will ask the Congress to review these considerations.

Sincerely,

GERALD R. FORD.

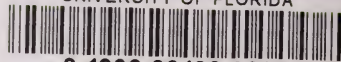








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